

AD \_\_\_\_\_

Award Number: DAMD17-98-1-8662

TITLE: Relationships of Stress Exposures to Health in Gulf War Veterans

PRINCIPAL INVESTIGATOR: John A. Fairbank, Ph.D.

CONTRACTING ORGANIZATION: Duke University Medical Center  
Durham, North Carolina 27710

REPORT DATE: October 2000

TYPE OF REPORT: Annual

PREPARED FOR: U.S. Army Medical Research and Materiel Command  
Fort Detrick, Maryland 21702-5012

DISTRIBUTION STATEMENT: Approved for public release;  
Distribution unlimited

The views, opinions and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy or decision unless so designated by other documentation.

**REPORT DOCUMENTATION PAGE**Form Approved  
OMB No. 074-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503

<b>1. AGENCY USE ONLY (Leave blank)</b>		<b>2. REPORT DATE</b> October 2000	<b>3. REPORT TYPE AND DATES COVERED</b> Annual (1 Oct 99 - 30 Sep 00)	
<b>4. TITLE AND SUBTITLE</b>  Relationships of Stress Exposures to Health in Gulf War Veterans			<b>5. FUNDING NUMBERS</b> DAMD17-98-1-8662	
<b>6. AUTHOR(S)</b> John A. Fairbank, Ph.D.			<b>8. PERFORMING ORGANIZATION REPORT NUMBER</b>	
<b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b> Duke University Medical Center Durham, North Carolina 27710  E-MAIL: jaf@psych.mc.duke.edu				
<b>9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)</b>  U.S. Army Medical Research and Materiel Command Fort Detrick, Maryland 21702-5012			<b>10. SPONSORING / MONITORING AGENCY REPORT NUMBER</b>	
<b>11. SUPPLEMENTARY NOTES</b>  Report contains color graphics.				
<b>12a. DISTRIBUTION / AVAILABILITY STATEMENT</b> Approved for public release; Distribution unlimited			<b>12b. DISTRIBUTION CODE</b>	
<b>13. ABSTRACT (Maximum 200 Words)</b> Research on Gulf War (GW) illnesses leaves many questions unanswered about diagnostic syndromes of GW illnesses, dimensions of stressor exposures encountered by GW veterans, relations among stressor exposures and GW syndromes or symptoms, and factors that may mediate these relationships. The proposed study has five key aims intended to address these gaps and enhance understanding of illnesses reported by GW veterans: (1) to identify and examine dimensions of illnesses and health problems commonly reported by GW veterans; (2) to assess exposures to environmental toxins and psychosocial stressors comprehensively and to identify the dimensions of these exposures; (3) to examine the extent to which particular types of dimensions of exposure experienced during deployment and participation in Operation Desert Shield/Desert Storm (ODS/S) are associated with the commonly reported and undefined post-war health problems of GW veterans; (4) to clarify how premilitary and predeployment adversities, risk factors, and protective factors affect GW illness outcomes; (5) to examine the mediating role of post-ODS/S factors (e.g., instrumental and emotional social support, general psychological functioning, specific comorbid psychiatric disorders, such as posttraumatic stress disorder and depression) on GW illness outcomes.  These aims will be achieved by obtaining in-depth data from a national probability sample of GW veterans, including both men and women in active and reserve components.				
<b>14. SUBJECT TERMS</b> Medically unexplained physical symptoms, Gulf War Illness, risk factors, protective factors			<b>15. NUMBER OF PAGES</b> 63	
			<b>16. PRICE CODE</b>	
<b>17. SECURITY CLASSIFICATION OF REPORT</b> Unclassified	<b>18. SECURITY CLASSIFICATION OF THIS PAGE</b> Unclassified	<b>19. SECURITY CLASSIFICATION OF ABSTRACT</b> Unclassified	<b>20. LIMITATION OF ABSTRACT</b> Unlimited	

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)  
Prescribed by ANSI Std. Z39-18  
298-102

## Table of Contents

Cover.....	1
SF 298.....	2
Table of Contents .....	3
Introduction.....	4
Body.....	5
Key Research Accomplishments.....	10
Reportable Outcomes.....	10
Conclusions.....	n/a
References.....	n/a
Appendices.....	11

## **INTRODUCTION: Brief Narrative of Subject, Purpose, and Scope of the Research**

Research on Gulf War (GW) illnesses leaves many questions unanswered about diagnostic syndromes of GW illnesses, dimensions of stressor exposures encountered by GW veterans, relations among stressor exposures and GW syndromes or symptoms, and factors that may mediate these relationships. The proposed study has five key aims intended to address these gaps and enhance understanding of illnesses reported by GW veterans:

- (1) to identify and examine dimensions of illnesses and health problems commonly reported by GW veterans;
- (2) to assess exposures to environmental toxins and psychosocial stressors comprehensively and to identify the dimensions of these exposures;
- (3) to examine the extent to which particular types of dimensions of exposure experienced during deployment and participation in Operation Desert Shield/Desert Storm (ODS/S) are associated with the commonly reported and undefined post-war health problems of GW veterans;
- (4) to clarify how premilitary and predeployment adversities, risk factors, and protective factors affect GW illness outcomes;
- (5) to examine the mediating role of post-ODS/S factors (e.g., instrumental and emotional social support, general psychological functioning, specific comorbid psychiatric disorders, such as posttraumatic stress disorder and depression) on GW illness outcomes.

These aims will be achieved by obtaining in-depth data from a national probability sample of GW veterans, including both men and women in active and reserve components.

These aims will be achieved using a two-phase study design. Phase 1 of this study is a mail survey of a national probability sample of GW veterans, including both men and women in active and reserve components. The goal of this survey is to provide comprehensive probability-based data on issues about the dimensions of Gulf War illnesses, dimensions of exposure to environmental toxins and psychosocial stressors encountered by GW veterans, and relationships between these exposures and GW illness syndromes. These issues as well as factors that may mediate relationships between stressor exposures and GW illnesses will be further examined in Phase 2 of the study, a computer-assisted telephone interview (CATI) conducted with a subsample of mail survey respondents with and without symptoms of GW illnesses.

## BODY

This section describes the research activities, accomplishments, and factors delaying completion for Year 2 tasks outlined in the approved statement of work. Plans for Year 3 are also described for each task.

### Sampling

#### *Year 2 Activities*

- ◆ Prepared a revised sampling design summary to describe the current sampling procedures being implemented.
- ◆ Thoroughly reviewed the data set documentation for the CCEP and DS/S data sets and identified the specific variables available that would motivate our sampling methodology. Prepared detailed instructions for DMDC to assist in sample frame construction.
- ◆ Used the DS/S and the public use CCEP files in the development of a stratified systematic sample design with eight symptom levels or stratification levels.
- ◆ Conducted a preliminary optimal allocation of a sample of approximately 10,000 over the eight levels of stratification. This optimization was preliminary because the GWI symptom rates that we derived were based on fairly general questionnaire variables from the public use CCEP. More specific statistical analyses will be conducted next year on a more detailed version of the CCEP.
- ◆ Conducted frequency analyses on CCEP variables. Used variables for ICD-9 diagnostic codes, constructed summary variables to identify proportion of sample reporting comparatively high rates of symptoms. Plan to use a subset of these variables with full CCEP sample to estimate optimal rates to sample veterans who have and have not participated in the CCEP for participation in mail survey.

#### *Year 3 Plans*

- ◆ Continue working with DMDC in the construction of the sampling frame of GW military personnel.
- ◆ Complete the explicit stratification of the sampling frame.
- ◆ Conduct the final optimal allocation of the sample of approximately 10,000 to the explicit strata.
- ◆ Select the sample of military personnel who are selected to participate in the mail health status questionnaire component of the study.
- ◆ Compute the sampling weights, which are the inverses of the selection probabilities.

- ◆ Adjust the personnel respondent sample for questionnaire non-response.
- ◆ Document the sample design and the sample weighting procedures used.

### Survey Questionnaire Development

#### *Year 2 Activities*

- ◆ Finalized items and format of Phase 1 mail survey prior to pilot testing.
- ◆ Developed consent form and procedures for pilot test of mail survey.
- ◆ Revised mail survey following pilot test in an effort to shorten while including additional items addressing domains of particular concern to pilot participants (e.g., eliminated items assessing constructs more appropriately evaluated in Phase 2 follow-up interview, enhanced assessment of exposure to environmental toxins).
- ◆ Formatted mail survey for printing by National Computer Systems (NCS) (e.g., developed cover graphic, had survey reviewed by professional editor). (A copy of the current version of the survey is provided in Appendix A.)
- ◆ Developed consent form for mail survey as well as informational brochure to serve as lead letter and related survey materials. (See Appendix B.)
- ◆ Negotiated subcontract with NCS for printing, mailing, and processing scanned survey forms. A draft version of the survey in a scannable format should be ready for proofing by October 30.
- ◆ Conducted literature searches of Medline and PsycInfo databases in preparation for development of Phase 2 follow-up interview and to determine optimal selection criteria for that interview. (Bibliography is provide in Appendix C.)

#### *Year 3 Plans*

- ◆ Work with NCS to finalize scannable version of mail survey and related materials.
- ◆ Determine optimal selection criteria for Phase 2 follow-up interview.
- ◆ Continue development of instrumentation for Phase 2 follow-up interview.
- ◆ Program and test instrumentation and related procedures Phase 2 follow-up interview

### Data Collection

#### *Year 2 Activities*

- ◆ Conducted pilot test of Phase 1 questionnaire.

#### *Year 3 Plans*

- ◆ Coordinate with NCS for the mail survey.
- ◆ Conduct tracing operations to obtain addresses for veterans who cannot be located using mailing address from IRS.
- ◆ Collect data for the mail survey.
- ◆ Pilot test and begin data collection for Phase 2 follow-up interview.

#### Clearances

##### *Year 2 Activities*

- ◆ Obtained approval from National Institute for Occupational Safety and Health (NIOSH) to access address data files obtained by NIOSH from the Internal Revenue Service through an Interagency Agreement under Internal Revenue Code Section 6103 (m)(3). The addresses received will be used to locate individuals for the survey and therefore solve the problem of missing addresses in DMDC files noted in the Year 1 annual report. Having this address file also should substantially decrease time required for tracing activities.
- ◆ Had protocol reviewed by DoD personnel to determine clearances needed for study. Obtained documentation that studies conducted under this grant do not require OMB review and are not subject to DoD8910.1-M. (See Appendix D.)
- ◆ Obtained clearances from Duke and RTI Institutional Review Boards (IRB) for full implementation of mail survey. (See Appendix E.)
- ◆ Obtained clearances from Duke and RTI IRBs for amendments to protocol for mail survey made to address issues raised in USAMRMC Human Subjects Review. (See Appendix E.)
- ◆ Obtained Human Subjects approval for mail survey from USAMRMC. (See Appendix D.)
- ◆ Obtained clearance for DMDC to continue assistance with sampling task.

##### *Year 3 Plans*

- ◆ Obtain IRB clearances for pilot test of Phase 2 follow-up interview.

- ◆ Obtain IRB and USAMRMC clearances for full implementation of Phase 2 follow-up interview.
- ◆ Obtain IRB clearance (annual review) for continued work on mail survey (e.g., processing and analyzing survey data).

## Project Schedule

### *Year 2 Activities*

As noted in our first year annual report, the study experienced a delay of several months due to OPRR/NIH suspension of all research activities involving human subjects at DUMC. We revised our study schedule to account for this delay and anticipated fielding the survey data collection effort by the end of the sixth month of year 2. However, in year 2 we encountered a series of delays associated with obtaining DoD clearances for the study. Details are provided in the bulleted items that are listed below. We have discussed with our USAMRMC project officer, Major John Stuart and DUMC grants officer, Ms. Amy Barbee, the option of requesting a 6-month to one-year extension of the project during year 3. Both indicated their support for such a request. On 9/15/00 we received final DoD clearance to proceed with the project.

- ◆ 4/4/00-4/30/00: On 4/4/00, RTI co-principal investigator, Dr. Robert Bray, sent an e-mail message to Mr. Tim Elig at DMDC requesting clarification of appropriate procedures for review of study by DMDC. On 4/11 Dr. Bray and key RTI project staff participated in a conference call with Mr. Elig in an effort to clarify this approval process. Mr. Elig put us in contact with James A. White, DoD internal Reports Control who concluded that the grant was not subject to the provisions of DoD 8910.1 1-M "DoD Procedures for Management of Information Requirements" and provided documentation to this effect via e-mail on 4/11. Mr. Elig also put us in contact with Bob Cushing, DoD Clearance Office, who after requesting and reviewing selected study materials, concluded that OMB review and approval was not required. (Documentation received via e-mail 4/13.) Throughout April there were additional communications with Mr. Elig and associated staff regarding the appropriate approval procedures for the study.
- ◆ 5/3/00-5/23/00: On 5/3/00, the PI, Dr. Fairbank, contacted the USAMRMC contract representative for study, Major John Stuart, in an effort to clarify the approval process. At this time, MAJ Stuart offered to look into and facilitate the approval process. In response to his efforts, on 5/9, Catherine Smith at USAMRMC sent Dr. Fairbank an e-mail indicating that the protocol for DAMD17-98-8662 had been reassigned to her for review of human subjects protection issues. In this message, Ms. Smith requested documentation of local IRB approval for the survey and related materials (e.g., a copy of the survey and accompanying consent letter). These materials were sent to Ms. Smith on 5/12/00.

In his efforts to facilitate the approval process, on 5/8 MAJ Stuart also contacted Mr. Mike Dove at DMDC to request continued support from DMDC with the sampling task for the mail survey. Mr. Dove (on 5/8) indicated that in order to continue work on the

study his office needed a letter from the contract officer, Major John Stuart endorsing the study sent with a statement of work and all relevant clearances.

- ◆ 5/24/00-6/21/00: On 5/24/00 Fairbank received an e-mail message from Ms. Smith indicating that an review of the study had been conducted by COL Julie Zadinsky, Acting Chair, Human Subjects Review Board who was requesting submission of a revised protocol as well as additional information regarding approval for active duty personnel to be involved in this research. On 6/6 Dr. Fairbank sent the requested information (i.e., a full USAMRMC Protocol for Research Involving Human Subjects and supporting documentation) to Ms. Smith.
- ◆ 6/22-7/31: On 6/22 Dr. Fairbank received from Ms. Smith an e-mail message that included a Memorandum of Record summarizing recommendations from the USAMRMC Human Subjects review of these materials. Ms. Smith's message indicated that the study would only receive approval once the protocol and consent letter were revised in accordance with the memorandum. The primary procedural issue identified in the memo pertained to USAMRMC legal opinion (offered by CPT Maleson) that it was not appropriate for active duty military personnel to receive any incentive for participating in the study. (In the 6/6 protocol all participants who returned a completed survey were to be entered into a drawing for several cash prizes.) Additionally, the memorandum requested further documentation of approval of consent procedures from the local IRBs. Subsequently, Dr. Fairbank contacted CPT Maleson in an effort to clarify military regulations regarding incentives for active duty personnel. Dr. Fairbank and CPT Maleson continued corresponding about this issue through 7/31 at which point a decision was made to revise the study procedures so that only participants who were no longer on active duty at the time of data collection would be eligible for the prize drawing.
- ◆ 8/1/00-9/13/00: On 8/14/00 Dr. Fairbank sent Ms. Smith a revised USAMRMC Human Subjects Protocol and related study materials intended to address the recommendations made in the Memorandum of Record summarizing the prior USAMRMC Human Subjects Review. On 8/15 Ms. Smith sent Dr. Fairbank an e-mail message indicating that the revisions were satisfactory, but that the study could not be approved until after the USAMRMC received approval for these revisions from Duke and RTI's IRBs. Requests for approval for the amended protocols were submitted to the local IRBs; approval from both the Duke and RTI IRBs was received on 9/13.
- ◆ 9/15/00: Dr. Fairbank received from Ms. Smith notification that the Phase 1 mail survey had received approval from the USAMRMC Human Subjects Review Board.
- ◆ 9/16/00-9/30/00: In an effort to resume the process of obtaining approval from DMDC for continued work on the study, on 9/18, Dr. Fairbank sent MAJ Stuart a revised work plan for the sampling task and copies of all clearances for the study. On 9/26/00 MAJ Stuart sent these materials along with the requested letter of support for the study to Mike Dove at DMDC. (On 10/2/00 Mr. Mike Dove contacted Dr. Fairbank about resuming work on the study. Relevant issues were discussed on 10/6 in a conference call and we are currently awaiting the requested sample files.)

### *Year 3 Plans*

- ◆ Submit revised study time line and request for project extension (6 months - 1 year) to USAMRMC grants officer.

### KEY RESEARCH ACCOMPLISHMENTS

This section of the report focuses on “key research accomplishments emanating from the research.” This project is just going into the field at the end of Year 2 and does not yet have accomplishments emanating from the research to report.



### REPORTABLE OUTCOMES

This sections of the report summarizes the results of the completed research. There are not reportable outcomes given that this project is still in the implementation phase.

### APPENDICES

The report includes five appendices—Appendix A: Gulf War Veterans Health Survey, Appendix B: Survey consent letter and other study materials, Appendix C: Working bibliography on Gulf War illnesses, Appendix D: Clearances from Military, Appendix D: Clear from Duke University Medical Center and Research Triangle Institute IRBs.



APPENDIX A  
Gulf War Veterans Health Survey (Draft)



# The Gulf War Veterans Health Survey

*Conducted by:*

*Duke University Medical Center  
The Research Triangle Institute*





The purpose of this questionnaire is to find out more about the health of people who were deployed to the Persian Gulf Theater at any time from August 1990 through July 1991.

If you were not deployed to the Persian Gulf Theater at all during that time period, please use a pencil to darken the circle below and return the questionnaire now in the postage-paid return envelope provided. We do not need you to answer any of the questions, but it is very important that you return the questionnaire to us so that we will know that you were not deployed during that time.

☐ I was not deployed to the Persian Gulf Theater at any time from August 1990 through July 1991.

If you were deployed to the Persian Gulf Theater at any time from August 1990 through July 1991, please complete the questionnaire.



# Gulf War Veterans Health Survey Instructions

- Pay careful attention to the *time frames* in questions and in the instructions that appear before some groups of questions. The time frames change from section to section of the questionnaire. For example, some questions will refer to your experiences during the time you were in the Persian Gulf, and other questions will refer to other time periods in your life.
- Most questions provide a set of answers. Read *all* of the printed answers before making your choice. If none of the printed answers exactly applies to you, mark the circle for the one answer that *best* fits your situation.
- Use only a *soft-lead pencil* (such as a #2) to complete this questionnaire.
- Make *heavy black marks* that *fill* the circle of your answer.

CORRECT MARK



INCORRECT MARKS



- *Completely erase* any answers you wish to change.
- Do *not* make any stray marks anywhere in this booklet.
- Sometimes you will be asked to "Choose an answer *on each line*," for example, when you are asked, "Please choose 'Yes' or 'No' for each question." For these questions, record an answer to each part of the question, as shown:

## EXAMPLE:

**Has a health care  
provider ever told  
you that you had  
any of the following?**

	<u>Yes</u>	<u>No</u>
A. ASTHMA	<input type="radio"/>	<input checked="" type="radio"/>
B. CHRONIC BRONCHITIS	<input type="radio"/>	<input checked="" type="radio"/>
C. CHRONIC RHINITIS	<input checked="" type="radio"/>	<input type="radio"/>
OR HAY FEVER		

- For many questions, you will be asked to "Please choose the *best* answer." You should mark only *one* circle for your answer in the column below the question, as shown:

## EXAMPLE:

**In general, would you say your health is:**

- ☐ EXCELLENT
- ☒ VERY GOOD
- ☐ GOOD
- ☐ FAIR
- ☐ POOR

1. From August 1990 through July 1991, in which area(s) of the Persian Gulf Theater did you serve? (Please choose "Yes" or "No" for each area.)

**Yes      No**

- A. IRAQ ..... ☐ ..... ☐  
B. SAUDI ARABIA ..... ☐ ..... ☐  
C. KUWAIT ..... ☐ ..... ☐  
D. TURKEY ..... ☐ ..... ☐  
E. OMAN ..... ☐ ..... ☐  
F. BAHRAIN ..... ☐ ..... ☐  
G. QATAR ..... ☐ ..... ☐  
H. THE UNITED ARAB EMIRATES ..... ☐ ..... ☐  
I. THE RED SEA ..... ☐ ..... ☐  
J. THE GULF OF OMAN ..... ☐ ..... ☐  
K. THE GULF OF ADEN ..... ☐ ..... ☐  
L. THE ARABIAN SEA ..... ☐ ..... ☐  
M. OTHER ..... ☐ ..... ☐

2. During the 12 months from August 1990 through July 1991, about how much time did you spend in the Persian Gulf Theater? (Please choose the best answer.)

- ☐ LESS THAN 3 MONTHS  
☐ 3 MONTHS BUT LESS THAN 6 MONTHS  
☐ 6 MONTHS BUT LESS THAN 9 MONTHS  
☐ MORE THAN 9 MONTHS

3. From August 1990 through July 1991, in which area of the Persian Gulf Theater did you spend most of your time? (Please choose the best answer.)

- ☐ IRAQ  
☐ SAUDI ARABIA  
☐ KUWAIT  
☐ TURKEY  
☐ OMAN  
☐ BAHRAIN  
☐ QATAR  
☐ THE UNITED ARAB EMIRATES  
☐ THE RED SEA  
☐ THE GULF OF OMAN  
☐ THE GULF OF ADEN  
☐ THE ARABIAN SEA  
☐ OTHER

4. From August 1990 through July 1991, about how long did you spend in the area you chose in Question #3? (Please choose the best answer.)

- ☐ LESS THAN 3 MONTHS  
☐ 3 MONTHS BUT LESS THAN 6 MONTHS  
☐ 6 MONTHS BUT LESS THAN 9 MONTHS  
☐ MORE THAN 9 MONTHS

5. During the entire time you have served on Active Duty, in the Reserves, or in the National Guard, about how much total time have you spent in the Persian Gulf Theater? (Please choose the best answer.)

- ☐ LESS THAN 3 MONTHS  
☐ 3 MONTHS BUT LESS THAN 6 MONTHS  
☐ 6 MONTHS BUT LESS THAN 9 MONTHS  
☐ 9 MONTHS BUT LESS THAN 1 YEAR  
☐ 1 YEAR BUT LESS THAN 2 YEARS  
☐ MORE THAN 2 YEARS

6. From August 1990 through July 1991, in which component of the Military did you serve? (Please choose the best answer.)

- ☐ ACTIVE ARMY (USA)  
☐ ARMY NATIONAL GUARD (ARNG)  
☐ ARMY RESERVE (USAR)  
☐ ACTIVE NAVY (USN)  
☐ NAVAL RESERVE (USNR)  
☐ ACTIVE AIR FORCE (USAF)  
☐ AIR NATIONAL GUARD (ANG)  
☐ AIR FORCE RESERVE (USAFR)  
☐ ACTIVE MARINE CORP (USMC)  
☐ MARINE CORPS RESERVE (USMCR)

- If you are asked to give numbers for your answer, please complete the grid as shown below:

**EXAMPLE:** Think about any illnesses you may have had in the past 12 months. How many days were you unable to perform your job because of an illness in the past 2 months?

- First, enter the number of days in the boxes. Use all three boxes. Write ONE number in each box.
- Always write the last number in the right-hand box. Fill in any unused boxes with zeros. For example, an answer of "5 days" would be written as "005."
- Then, blacken the matching circle below each box.

Days		
0	0	5
<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. What date did you first begin serving in the Persian Gulf Theater, even if it was before August 1990?

Month	Year
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>

8. What date did you stop serving in the Persian Gulf Theater, even if it was after July 1991, (that is, what was the end date of your last deployment to the Persian Gulf)?

Month	Year
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>

Think of the first time you were deployed to the Persian Gulf Theater during the time from August 1990 through July 1991. The next several questions refer to the time of that deployment, which will be called "the time of your first deployment." Please remember that if you were deployed to the Persian Gulf Theater prior to August 1990 or after July 1991, we do not want you to answer regarding that time period.

9. At the time of your first deployment (that is, during the period from August 1990 through July 1991), what was your pay grade? (Please choose the best answer.)

**Enlisted**

- ☐ E-1  
☐ E-2  
☐ E-3  
☐ E-4  
☐ E-5  
☐ E-6  
☐ E-7  
☐ E-8  
☐ E-9

**Officer**

- ☐ TRAINEE  
☐ W1-W5  
☐ O-1 OR O-1E  
☐ O-2 OR O-2E  
☐ O-3 OR O-3E  
☐ O-4  
☐ O-5  
☐ O-6  
☐ O-7 TO O-10

10. At the time of your first deployment (that is, during the period from August 1990 through July 1991), which of the following categories best describes the military responsibilities you had? (Please choose the best answer.)

Please refer to the double-sided handout labeled "Job Category Examples Handout" that came with this survey for examples of different job categories.

**ENLISTED**

- ☐ INFANTRY, GUN CREW, OR SEAMANSHIP SPECIALIST  
☐ ELECTRONIC EQUIPMENT REPAIR SPECIALIST  
☐ COMMUNICATIONS OR INTELLIGENCE SPECIALIST  
☐ HEALTH CARE SPECIALIST/TECHNICIAN  
☐ OTHER TECHNICAL OR ALLIED SPECIALIST  
☐ FUNCTIONAL SUPPORT AND ADMINISTRATION  
☐ ELECTRICAL OR MECHANICAL EQUIPMENT REPAIR SPECIALIST  
☐ CRAFTSMAN  
☐ SERVICE AND SUPPLY HANDLER  
☐ OTHER (E.G., OFFICER CANDIDATES, STUDENTS, SPECIAL DUTIES)

**OFFICER**

- ☐ GENERAL OFFICER, EXECUTIVE OFFICER, OR COMMANDING OFFICER  
☐ TACTICAL OPERATIONS OFFICER

(continued on next page)

- ☐ INTELLIGENCE OFFICER
- ☐ ENGINEERING OR MAINTENANCE OFFICER
- ☐ SCIENTIST, PROFESSIONAL, OR STAFF SUPPORT  
(NOT INVOLVED IN HEALTH CARE)
- ☐ HEALTH CARE PROVIDER
- ☐ ADMINISTRATOR OR OPERATIONAL SUPPORT
- ☐ SUPPLY, PROCUREMENT, OR ALLIED OFFICER
- ☐ OTHER (E.G., STUDENTS, TRAINEES, BILLET  
DESIGNATORS)

**11. At the time of your first deployment, what was the highest level of education you had completed? (Please choose the best answer.)**

- ☐ HAD NOT YET GRADUATED FROM HIGH SCHOOL
- ☐ GED OR ABE CERTIFICATE
- ☐ HIGH SCHOOL GRADUATE
- ☐ TRADE OR TECHNICAL SCHOOL GRADUATE
- ☐ SOME COLLEGE BUT NOT A 4-YEAR DEGREE
- ☐ 4-YEAR COLLEGE DEGREE (BA, BS, OR EQUIVALENT)
- ☐ SOME GRADUATE OR PROFESSIONAL STUDY BUT NO  
GRADUATE DEGREE
- ☐ GRADUATE OR PROFESSIONAL DEGREE

**12. At the time of your first deployment, what was your marital situation? (Please choose the best answer.)**

- ☐ NOT MARRIED, BUT LIVING AS MARRIED
- ☐ MARRIED
- ☐ SEPARATED AND NOT LIVING AS MARRIED
- ☐ DIVORCED AND NOT LIVING AS MARRIED
- ☐ WIDOWED AND NOT LIVING AS MARRIED
- ☐ SINGLE, NEVER MARRIED, AND NOT LIVING AS MARRIED

*The next group of questions ask about a number of health problems or concerns a person might have. We would like to know whether or not you have experienced each of these problems during the past 6 months.*

**13. In the past 6 months, have you experienced any of these health problems? (Please choose "Yes" or "No" for each health problem.)**

**Yes      No**

- A. SEVERE ARTHRITIS, RHEUMATISM,  
OR OTHER BONE OR JOINT DISEASES ..... ☐ ..... ☐
- B. SEVERE ASTHMA, BRONCHITIS,  
EMPHYSEMA, OR OTHER LUNG PROBLEMS .. ☐ ..... ☐
- C. AIDS ..... ☐ ..... ☐
- D. BLINDNESS OR SEVERE VISUAL OR  
HEARING IMPAIRMENT ..... ☐ ..... ☐
- E. HIGH BLOOD PRESSURE OR HYPERTENSION .. ☐ ..... ☐

**Yes      No**

- F. DIABETES OR HIGH BLOOD SUGAR ..... ☐ ..... ☐
- G. HEART ATTACK OR OTHER SERIOUS  
HEART TROUBLE ..... ☐ ..... ☐
- H. SEVERE HERNIA OR RUPTURE ..... ☐ ..... ☐
- I. SEVERE KIDNEY OR LIVER DISEASE ..... ☐ ..... ☐
- J. LUPUS, THYROID DISEASE, OR OTHER  
AUTOIMMUNE DISORDERS ..... ☐ ..... ☐
- K. MULTIPLE SCLEROSIS, EPILEPSY,  
OR OTHER NEUROLOGICAL DISORDERS ..... ☐ ..... ☐
- L. CHRONIC STOMACH OR GALL BLADDER  
TROUBLE ..... ☐ ..... ☐
- M. STROKE ..... ☐ ..... ☐
- N. ULCER ..... ☐ ..... ☐
- O. CANCER OR A MALIGNANT TUMOR  
OF ANY KIND ..... ☐ ..... ☐
- P. OTHER MAJOR HEALTH PROBLEMS ..... ☐ ..... ☐

**14. In the past 6 months, have you had persistent or recurring problems with... (Please choose "Yes" or "No" for each health problem.)**

**Yes      No**

- A. HOT OR COLD SPELLS, FEVER,  
SWEATS AT NIGHT, OR SHAKING CHILLS .... ☐ ..... ☐
- B. MOUTH SORES ..... ☐ ..... ☐
- C. INFLAMMATION OR REDNESS OF YOUR EYES  
(PINK EYES) ..... ☐ ..... ☐
- D. UNEXPECTED HAIR LOSS ..... ☐ ..... ☐
- E. SORE THROAT OR IRRITATION ..... ☐ ..... ☐
- F. PAIN OR ACES IN MORE THAN ONE JOINT .. ☐ ..... ☐
- G. BACK PAIN ..... ☐ ..... ☐
- H. JOINT STIFFNESS ..... ☐ ..... ☐
- I. MUSCLE TENSION, ACES, SORENESS,  
OR STIFFNESS ..... ☐ ..... ☐
- J. FEELING WEAK IN PARTS OF YOUR BODY ... ☐ ..... ☐
- K. TENDER OR PAINFUL LYMPH GLANDS  
UNDER YOUR ARMS OR IN YOUR NECK .... ☐ ..... ☐
- L. A FEELING OF BODILY DISCOMFORT  
AFTER EXERTION ..... ☐ ..... ☐
- M. NUMBNESS OR TINGLING IN PARTS  
OF YOUR BODY ..... ☐ ..... ☐
- N. LOSS OF HEARING OR RINGING  
IN YOUR EARS ..... ☐ ..... ☐
- O. TREMORS OR SHAKING ..... ☐ ..... ☐
- P. DOUBLE VISION, WHEN YOU SEE 2 IMAGES,  
NOT CORRECTABLE BY GLASSES ..... ☐ ..... ☐
- Q. SEIZURES OR CONVULSIONS ..... ☐ ..... ☐
- R. ANY HEADACHES ..... ☐ ..... ☐
- S. HEART PALPITATIONS, POUNDING  
OR RACING ..... ☐ ..... ☐
- T. PAINS IN YOUR HEART OR CHEST ..... ☐ ..... ☐
- U. FAINTNESS, LIGHTHEADEDNESS  
OR DIZZINESS ..... ☐ ..... ☐

(continued on next page)

- Yes   No
- V. TROUBLE SWALLOWING .....○.....○
- W. NAUSEA OR AN UPSET STOMACH  
(OTHER THAN DURING PREGNANCY) .....○.....○
- X. REFLUX, HEARTBURN, OR INDIGESTION  
(OTHER THAN DURING PREGNANCY) .....○.....○
- Y. VOMITING (OTHER THAN  
DURING PREGNANCY) .....○.....○
- Z. FREQUENT DIARRHEA (MORE THAN  
3 WATERY STOOLS PER DAY) .....○.....○
- AA. ABDOMINAL PAIN  
(OTHER THAN WHEN MENSTRUATING) ...○.....○
- BB. CONSTIPATION .....○.....○
- CC. FREQUENT OR PAINFUL URINATION .....○.....○
- DD. ANY TENDENCY TO BRUISE OR BLEED  
EASILY (INCLUDING NOSE BLEEDING) .....○.....○
- EE. SKIN REDNESS OR A SKIN RASH .....○.....○
- FF. DRYNESS OR SCALING OF YOUR SKIN .....○.....○
- GG. BLISTERS, OPEN SORES, OR SKIN  
ULCERS .....○.....○
- HH. ERUPTIONS OF HIVES OR WELTS  
ON YOUR SKIN .....○.....○
- II. PERSISTENT SENSATIONS OF ITCHING  
ON YOUR SKIN .....○.....○
- JJ. WOUNDS THAT ARE SLOW TO HEAL .....○.....○
- KK. SWELLING OF BOTH FEET  
OR BOTH ANKLES .....○.....○

**15. In the past 6 months... (Please choose  
"Yes" or "No" for each question.)**

- Yes   No
- A. HAVE YOU HAD PROBLEMS WITH  
FEELING TIRED? .....○.....○
- B. HAVE YOU NEEDED TO REST MORE? .....○.....○
- C. HAVE YOU BEEN FEELING UNUSUALLY  
SLEEPY OR DROWSY? .....○.....○
- D. HAVE YOU HAD PROBLEMS STARTING  
THINGS? .....○.....○
- E. WERE YOU LACKING IN ENERGY? .....○.....○
- F. HAVE YOU HAD LESS STRENGTH  
IN YOUR MUSCLES? .....○.....○
- G. HAVE YOU BEEN FEELING WEAK? .....○.....○
- H. HAVE YOU HAD PROBLEMS THINKING  
CLEARLY? .....○.....○
- I. HAVE YOU BEEN MAKING SLIPS OF THE  
TONGUE WHEN SPEAKING? .....○.....○
- J. HAVE YOU HAD PROBLEMS WITH YOUR  
MEMORY? .....○.....○
- K. HAVE YOU HAD PROBLEMS WITH  
FORGETFULNESS (LIKE FORGETTING  
WHERE YOU PUT THINGS OR FORGETTING  
APPOINTMENTS)? .....○.....○
- L. HAVE YOU HAD ANY DIFFICULTY  
COMPREHENDING OR UNDERSTANDING  
WHAT OTHERS ARE SAYING TO YOU? .....○.....○

- Yes   No
- M. HAVE YOU HAD PROBLEMS WITH FEELING  
CONFUSED OR DISORIENTED IN PLACE OR  
TIME? (FEELING CONFUSED ABOUT WHERE  
YOU ARE, WHO IS AROUND, OR NOT  
KNOWING WHAT DAY IT IS) .....○.....○
- N. HAVE YOU BEEN HAVING DIFFICULTY  
UNDERSTANDING WHAT YOU READ, EVEN  
WHEN YOU ARE PAYING ATTENTION TO  
WHAT YOU ARE READING? .....○.....○
- O. HAVE YOU BEEN BOTHERED BY A COUGH  
WHEN YOU DID NOT HAVE A COLD OR FLU? .○.....○
- P. HAVE YOU BEEN CONGESTED OR DID YOU  
BRING UP MUCOUS OR PHLEGM WHEN YOU  
DID NOT HAVE A COLD OR FLU? .....○.....○
- Q. HAS YOUR CHEST SOUNDED WHEEZY OR  
WHISTLING WHEN YOU DID NOT HAVE A  
COLD OR FLU? .....○.....○
- R. HAVE YOU HAD AN ATTACK OF WHEEZING  
THAT HAS MADE YOU FEEL SHORT OF  
BREATH? .....○.....○
- S. HAS THERE BEEN AN OCCASION WHEN  
YOU HAD ATTACKS OF SHORTNESS OF  
BREATH WHEN WALKING UP STAIRS OR  
RUNNING OR WALKING QUICKLY ON FLAT  
GROUND? .....○.....○
- T. HAS THERE BEEN AN OCCASION WHEN  
YOU HAD TIGHTNESS OF THE CHEST WHEN  
WALKING UP STAIRS OR RUNNING OR  
WALKING QUICKLY ON FLAT GROUND? ....○.....○

**16. In the past 6 months, have you experienced  
extreme fatigue almost every day for 1 month  
or longer?**

- A. ○ No → GO TO INSTRUCTIONS BEFORE QUESTION 17  
○ Yes  
↳ IN WHAT MONTH AND YEAR DID THIS FIRST BEGIN,  
EVEN IF IT BEGAN PRIOR TO THE PAST 6 MONTHS?

B.

Month		Year	
0	0	0	0
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9

(continued on next page)

**C. Did this fatigue begin with...**

**Yes   No   Don't know**

1. A COLD OR FLU-LIKE ILLNESS? ... ☐ ... ☐ ... ☐
2. MONONUCLEOSIS? ... ☐ ... ☐ ... ☐
3. ANOTHER INFECTION? ... ☐ ... ☐ ... ☐
4. AN EMOTIONALLY STRESSFUL OR OTHER EVENT? ... ☐ ... ☐ ... ☐

**D. We would like you to rate this fatigue.**

Think of a scale from 0 to 10. A 0 means your energy level was extremely low, and a 10 means it was extremely high. Think now of the worst part of your fatigue. What was the lowest that your energy level dropped?

- |         |         |
|---------|---------|
| ① ZERO  | ⑥ SIX   |
| ① ONE   | ⑦ SEVEN |
| ② TWO   | ⑧ EIGHT |
| ③ THREE | ⑨ NINE  |
| ④ FOUR  | ⑩ TEN   |
| ⑤ FIVE  |         |

**E. During the worst part of your fatigue, what percent of your usual daily activity were you able to maintain?**

- ☐ LESS THAN 25%
- ☐ 25 UP TO 50%
- ☐ 50 UP TO 75%
- ☐ 75% OR MORE

**F. Did you see a doctor specifically for your fatigue?**

- ☐ YES
- ☐ NO

**G. Have you fully recovered from your fatigue?**

- ☐ NO → GO TO INSTRUCTIONS BEFORE QUESTION 19
- ☐ DON'T KNOW → GO TO INSTRUCTIONS BEFORE QUESTION 19

- ☐ YES

↳ IN WHAT MONTH AND YEAR DID YOU RECOVER?

**H.**

Month	Year
0 0	0 0
1 1	1 1
2 2	2 2
3 3	3 3
4 4	4 4
5 5	5 5
6 6	6 6
7 7	7 7
8 8	8 8
9 9	9 9

We would now like to know if some odors or substances bother you.

**17. In the past 6 months, has routine or normal exposure to substances like gasoline, hair spray, paint, household cleaners, perfume, or soap caused you to feel physically ill?**

- A. ☐ NO → GO TO QUESTION 18

- ☐ YES

↳ IN WHAT MONTH AND YEAR DID THIS FIRST BEGIN, EVEN IF IT BEGAN PRIOR TO THE PAST 6 MONTHS?

B.

Month	Year
0 0	0 0
1 1	1 1
2 2	2 2
3 3	3 3
4 4	4 4
5 5	5 5
6 6	6 6
7 7	7 7
8 8	8 8
9 9	9 9

**18. In the past 6 months, has exposure to the following substances caused you to be physically ill or to have difficulty thinking or functioning? (Please choose "Yes" or "No" for each substance.)**

**Yes   No**

- A. SMOG OR AIR POLLUTION ... ☐ ... ☐
- B. CIGARETTE SMOKE ... ☐ ... ☐
- C. VEHICLE EXHAUST OR FUMES ... ☐ ... ☐
- D. COPIERS OR LASER PRINTERS ... ☐ ... ☐
- E. NEWSPAPERS, MAGAZINES, OR OTHER NEWSPRINT ... ☐ ... ☐
- F. PESTICIDES, HERBICIDES, INSECTICIDES, OR FERTILIZERS ... ☐ ... ☐
- G. NEW OFFICE BUILDINGS OR HOMES (E.G., SEALED WINDOWS) ... ☐ ... ☐
- H. CARPETING OR DRAPES ... ☐ ... ☐
- I. ORGANIC CHEMICALS, SOLVENTS, GLUES, PAINTS, OR FUEL ... ☐ ... ☐
- J. COSMETICS, PERFUMES, HAIR SPRAY, DEODORANTS, NAIL POLISH, OR SOAPS ... ☐ ... ☐
- K. OTHER ... ☐ ... ☐

**19. In general, did you have reactions to any of these substances where you felt physically ill or had difficulty thinking or functioning before August 1990?**

- ☐ YES, HAD THIS TYPE OF REACTION BEFORE AUGUST 1990
- ☐ NO, ONLY HAD THIS TYPE OF REACTION SINCE AUGUST 1990
- ☐ NEVER HAD THIS TYPE OF REACTION

The next few questions ask your views about your health, now and during the past 4 weeks.

**20. In general, would you say your health is...**

(Please choose the best answer.)

- ① EXCELLENT
- ② VERY GOOD
- ③ GOOD
- ④ FAIR
- ⑤ POOR

**21. Compared to 1 year ago, how would you rate your health in general now? Would you say it is... (Please choose the best answer.)**

- ① MUCH BETTER NOW THAN 1 YEAR AGO
- ② SOMEWHAT BETTER NOW
- ③ ABOUT THE SAME
- ④ SOMEWHAT WORSE NOW
- ⑤ MUCH WORSE NOW THAN 1 YEAR AGO

**22. Now think about the year before the Gulf War began. That would be from August 1989 to July 1990. Would you say your general health at that time was... (Please choose the best answer.)**

- ① EXCELLENT
- ② VERY GOOD
- ③ GOOD
- ④ FAIR
- ⑤ POOR

**23. The following items are about activities you might do during a typical day. Does your health now limit you a lot, limit you a little, or not limit you at all in doing these activities?**

My health limits me ...	<u>A lot</u>	<u>A little</u>	<u>Not at all</u>
A. VIGOROUS ACTIVITIES, SUCH AS RUNNING, LIFTING HEAVY OBJECTS, PARTICIPATING IN STRENUOUS SPORTS.	①	②	③
B. MODERATE ACTIVITIES, SUCH AS MOVING A TABLE, PUSHING A VACUUM CLEANER, BOWLING, OR PLAYING GOLF.	①	②	③
C. LIFTING OR CARRYING GROCERIES.	①	②	③
D. CLIMBING SEVERAL FLIGHTS OF STAIRS.	①	②	③

My health limits me ...	<u>A lot</u>	<u>A little</u>	<u>Not at all</u>
E. CLIMBING ONE FLIGHT OF STAIRS.	①	②	③
F. BENDING, KNEELING, OR STOOPING.	①	②	③
G. WALKING MORE THAN A MILE.	①	②	③
H. WALKING SEVERAL BLOCKS.	①	②	③
I. WALKING ONE BLOCK.	①	②	③
J. BATHING OR DRESSING YOURSELF.	①	②	③

**24. During the past 4 weeks, have you had to cut down on the amount of time you spent on work or other activities as a result of your physical health?**

- ① YES
- ② NO

**25. During the past 4 weeks, have you accomplished less than you would like, as a result of your physical health?**

- ① YES
- ② NO

**26. During the past 4 weeks, were you limited in the kind of work or other regular daily activities you do, as a result of your physical health?**

- ① YES
- ② NO

**27. During the past 4 weeks, have you had difficulty performing the work or other regular daily activities you do as a result of your physical health, for example, it took extra effort?**

- ① YES
- ② NO

**28. During the past 4 weeks, have you cut down the amount of time you spent on work or other regular daily activities as a result of any emotional problems, such as feeling depressed or anxious?**

- ① YES
- ② NO

29. During the past 4 weeks, have you accomplished less than you would like as a result of any emotional problems, such as feeling depressed or anxious?

- ① YES
- ② NO

30. During the past 4 weeks, did you not do work or other regular daily activities as carefully as usual, as a result of any emotional problems, such as feeling depressed or anxious?

- ① YES
- ② NO

31. During the past 4 weeks, to what extent has your physical health, or emotional problems, interfered with your normal social activities with family, friends, neighbors, or groups?

- ① NOT AT ALL
- ② A LITTLE BIT
- ③ MODERATELY
- ④ QUITE A BIT
- ⑤ EXTREMELY

32. How much bodily pain have you had during the past 4 weeks?

- ① NONE
- ② VERY MILD
- ③ MILD
- ④ MODERATE
- ⑤ SEVERE
- ⑥ VERY SEVERE PAIN

33. During the past 4 weeks, how much did pain interfere with your normal work including both work outside the home and housework?

- ① NOT AT ALL
- ② A LITTLE BIT
- ③ MODERATELY
- ④ QUITE A BIT
- ⑤ EXTREMELY

34. The next group of questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling.

How much time during the past 4 weeks . . .

A. DID YOU FEEL FULL OF PEP?

B. HAVE YOU BEEN A VERY NERVOUS PERSON?

C. HAVE YOU FELT SO DOWN IN THE DUMPS THAT NOTHING COULD CHEER YOU UP?

D. HAVE YOU FELT CALM AND PEACEFUL?

E. DID YOU HAVE A LOT ENERGY?

F. HAVE YOU FELT DOWNHEARTED AND BLUE?

G. DID YOU FEEL WORN OUT?

H. HAVE YOU BEEN A HAPPY PERSON?

I. DID YOU FEEL TIRED?

Time during the past 4 weeks					
ALL OF THE TIME	MOST OF THE TIME	A GOOD BIT OF THE TIME	SOME OF THE TIME	A LITTLE OF THE TIME	NONE OF THE TIME
①	②	③	④	⑤	⑥
①	②	③	④	⑤	⑥
①	②	③	④	⑤	⑥
①	②	③	④	⑤	⑥
①	②	③	④	⑤	⑥
①	②	③	④	⑤	⑥
①	②	③	④	⑤	⑥
①	②	③	④	⑤	⑥
①	②	③	④	⑤	⑥

**35. During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting with friends, relatives, etc.)?**

- ① ALL OF THE TIME
- ② MOST OF THE TIME
- ③ SOME OF THE TIME
- ④ A LITTLE OF THE TIME
- ⑤ NONE OF THE TIME

*The next four questions are statements about health. Please tell us how true or false each of these statements is for you.*

**36. I seem to get sick a little easier than other people.**

- ① DEFINITELY TRUE
- ② MOSTLY TRUE
- ③ DON'T KNOW
- ④ MOSTLY FALSE
- ⑤ DEFINITELY FALSE

**37. I am as healthy as anybody I know.**

- ① DEFINITELY TRUE
- ② MOSTLY TRUE
- ③ DON'T KNOW
- ④ MOSTLY FALSE
- ⑤ DEFINITELY FALSE

**38. I expect my health to get worse.**

- ① DEFINITELY TRUE
- ② MOSTLY TRUE
- ③ DON'T KNOW
- ④ MOSTLY FALSE
- ⑤ DEFINITELY FALSE

**39. My health is excellent.**

- ① DEFINITELY TRUE
- ② MOSTLY TRUE
- ③ DON'T KNOW
- ④ MOSTLY FALSE
- ⑤ DEFINITELY FALSE

*These questions are about medical care you may have needed in the past 6 months.*

**40. During the past 6 months, how many times did you go to a private outpatient facility (for example, a private clinic or a private physician's office) to obtain medical care for a physical health problem (for example, illness or injury)? Do not include routine health care such as checkups.**

- ☐ 0 TIMES
- ☐ 1 TIME
- ☐ 2 OR 3 TIMES
- ☐ MORE THAN 3 TIMES

**41. During the past 6 months, how many times did you visit a hospital emergency room for a physical health problem (for example, illness or injury)?**

- ☐ 0 TIMES
- ☐ 1 TIME
- ☐ 2 OR 3 TIMES
- ☐ MORE THAN 3 TIMES

**42. During the past 6 months, how many different times were you an inpatient for a physical health problem; that is, you had an overnight stay in a hospital?**

- ☐ 0 TIMES
- ☐ 1 TIME
- ☐ 2 OR 3 TIMES
- ☐ MORE THAN 3 TIMES

Below is a list of problems people sometimes have. Please read each one carefully and blacken the circle that best describes how much that problem has distressed or bothered you during the past 4 weeks.

43. During the past 4 weeks, how much were you bothered by:	Not at all	A little	Quite a bit	Extremely
A. HEADACHES	①	②	③	④
B. NERVOUSNESS OR SHAKINESS INSIDE	①	②	③	④
C. FAINTNESS OR DIZZINESS	①	②	③	④
D. LOSS OF SEXUAL INTEREST OR PLEASURE	①	②	③	④
E. FEELING LOW IN ENERGY OR SLOWED DOWN	①	②	③	④
F. THOUGHTS OF ENDING YOUR LIFE	①	②	③	④
G. TREMBLING	①	②	③	④
H. POOR APPETITE	①	②	③	④
I. CRYING EASILY	①	②	③	④
J. A FEELING OF BEING TRAPPED OR CAUGHT	①	②	③	④
K. FEELING SUDDENLY SCARED FOR NO REASON	①	②	③	④
L. BLAMING YOURSELF FOR THINGS	①	②	③	④
M. FEELING LONELY	①	②	③	④
N. FEELING BLUE	①	②	③	④
O. WORRYING OR STEWING ABOUT THINGS	①	②	③	④
P. FEELING NO INTEREST IN THINGS	①	②	③	④
Q. FEELING FEARFUL	①	②	③	④
R. YOUR HEART POUNDING OR RACING	①	②	③	④
S. DIFFICULTY IN FALLING ASLEEP OR STAYING ASLEEP	①	②	③	④
T. FEELING HOPELESS ABOUT THE FUTURE	①	②	③	④
U. FEELING TENSE OR KEYED UP	①	②	③	④
V. SPELLS OF TERROR OR PANIC	①	②	③	④
W. FEELING RESTLESS, LIKE YOU CAN'T KEEP STILL	①	②	③	④
X. FEELING EVERYTHING IS AN EFFORT	①	②	③	④
Y. FEELINGS OF WORTHLESSNESS	①	②	③	④

This next set of questions asks about potentially upsetting experiences that happen to many people at some point in their lives. We would like to know if you had any of these experiences before you entered the military. Please record in Column 1 whether or not you had the experience before age 16. Record in Column 2 whether or not you had the experience between the time you turned 16 years of age and the time you first entered the Active Military, Reserves, or National Guard. As with all information you provide on this survey, your answers to these questions will be kept confidential.

	COLUMN 1		COLUMN 2	
	Happened before 16 years of age?		Happened between age 16 and time entered Military?	
	YES	NO	YES	NO
44. A loved one was deliberately killed, murdered during a crime, or killed by a drunk driver. By "loved one" we mean either an immediate family member (e.g., parent, sibling) or an intimate partner (e.g., spouse, live-in partner). . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. You were in an accident or fire in which your life or a loved one's life was <u>endangered</u> . Include incidents in which you or a loved one were <u>seriously</u> injured or a loved one died. . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. You were in a natural disaster, such as an earthquake, tornado, or hurricane, in which your life or a loved one's life was <u>endangered</u> . Include incidents in which you or a loved one were <u>seriously</u> injured or a loved one died. . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
47. Someone attacked or threatened you with a gun, knife, or some other <u>weapon</u> regardless of whether you ever reported it or not. . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
48. Someone physically assaulted you with enough force that they did or could have <u>seriously injured you</u> . Examples would include someone beating you with their fists, choking you, throwing you against a wall, or intentionally burning you. . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
49. Someone made you have oral, anal, or vaginal intercourse against your will by using <u>physical force</u> or by <u>threatening</u> to harm you or someone close to you. . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<i>The next three questions ask only about experiences occurring <u>before</u> you were age 16.</i>				
50. Someone <u>5 or more years older than you</u> had oral, anal, or vaginal intercourse with you regardless of whether or not they used physical force or threatened you. . . . .	<input type="radio"/>	<input type="radio"/>		
51. Someone <u>5 or more years older than you</u> had sexual contact with you that did not involve oral, anal, or vaginal intercourse. . . . .	<input type="radio"/>	<input type="radio"/>		
52. A <u>parent or other caretaker</u> kicked, hit, or otherwise physically assaulted or punished you so that you suffered some degree of injury, including bruises, cuts, or other marks. . . . .	<input type="radio"/>	<input type="radio"/>		

The next set of questions asks about experiences you may have had while serving in the Military. Please record in Column 1 how frequently you had the experience during the time period from the date you first entered the Active Military, Reserves, or National Guard until August 1990. By "the date you first entered," we mean your earliest date of entry to military service. (For example, if you entered the Army in June 1970, then entered the Reserves in September 1980, you would answer regarding the time period from June 1970 until August 1990.)

Record in Column 2 how frequently you had the experience from the time of your first deployment through July 1991. Please remember that "the time of your first deployment" refers to the first time that you were deployed to the Persian Gulf during the time period from August 1990 through July 1991.

NUMBER OF TIMES:

	COLUMN 1					COLUMN 2				
	From time entered Military until August 1990					From time of first deployment through July 1991				
	0/NEVER	1-2	3-12	13-50	51 OR MORE	0/NEVER	1-2	3-12	13-50	51 OR MORE
53. How often did you view a continual stream of casualties? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
54. How often did you view casualties (Americans, enemy troops, other military personnel or civilians) who were severely wounded, disfigured or mutilated? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
55. How many times were you involved in the post-mortem preparation and/or evacuation of bodies? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
56. How often were you under (enemy) fire? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
57. How many times did you see people critically injured or killed because of leadership errors, personnel shortages, or equipment malfunction? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
58. How many times did you have to decide who would receive life saving care? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
59. How often were you in actual danger of being injured or killed (i.e., received incoming rockets, mortars, or small arms fire; pinned down or overrun)? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
60. How many times did you go on patrol or have other very dangerous duty (e.g., convoys, hazardous transport, guard duty with enemy in the vicinity)? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
61. How many times were you placed on alert for any form of enemy attack (e.g., rocket, mortar, chemical, biological, etc.)? .....	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please note that questions 62-69 are rated on a scale from "Never" to "4 or more" times (rather than from "Never" to "51 or more" times).

NUMBER OF TIMES:

62. How often did you sit with someone dying from military-related causes? .....
63. How many times did you make critical or life-threatening errors in your work because of excessive fatigue or work load (i.e., as compared to the average level of fatigue or work load in the military)? .....
64. How often were you responsible for making the decision to allow someone to die? .....
65. How often did you provide care or services to enemy personnel that was of lesser quality than you were actually able to give? .....
66. How many times did you lose communications or become cut-off from contact with your own unit or other units? .....
67. How many times was a woman or man you knew, or were close to, killed, wounded, or missing in action? (By how many times we mean how many people this happened to.) .....

The next two questions ask about unwanted sexual experiences occurring in the Military.

68. How often did anyone make you have oral, anal, or vaginal intercourse against your will by using physical force or threatening to harm you or someone close to you? .....
69. How often did you experience sexual harassment that did not involve oral, anal, or vaginal intercourse? Examples would include unwanted sexual touching, grabbing, or brushing against you. ....

COLUMN 1					COLUMN 2				
From time entered military until August 1990					From time of first deployment through July 1991				
0/NEVER	1	2	3	4 OR MORE	0/NEVER	1	2	3	4 OR MORE
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

These next questions ask about substances that you may have had direct contact with or were exposed to during the time of your first deployment. We would like to know the total number of days you think you were exposed to these substances. Please consider any part of a day as 1 day.

**70. How many days were you exposed to:**

	0 DAYS	1-5 DAYS	6-30 DAYS	31 OR MORE
A. SMOKE FROM OIL WELL FIRES . . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B. EXHAUST FROM HEATERS OR GENERATORS (E.G., KEROSENE HEATERS) . . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C. DIESEL AND/OR OTHER PETROCHEMICALS, INCLUDING PAINT OR SOLVENTS (EXPOSURE TO FUMES OR CONTACT WITH SKIN) . . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D. CARC (CHEMICAL AGENT RESISTANT COMPOUND) PAINT. . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E. BURNING TRASH OR BURNING FECES . . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
F. DEPLETED URANIUM . . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
G. MICROWAVES . . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
H. PESTICIDES LIKE CREAM, SPRAYS, OR FLEA COLLARS OR PESTICIDES ON CLOTHING OR BEDDING . . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I. NERVE GAS . . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
J. MUSTARD GAS OR OTHER BLISTERING AGENTS . . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
K. FOOD CONTAMINATED WITH SMOKE, OIL, OR OTHER CHEMICALS . . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
L. LOCAL FOOD OTHER THAN FOOD PROVIDED BY THE ARMED FORCES . . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
M. DEAD ANIMALS . . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
N. BATHING OR DRINKING WATER CONTAMINATED BY SMOKE, OIL, OR OTHER CHEMICALS . . . . .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**How many days were you exposed to:**

O. WATER FROM A LOCAL POND, RIVER OR PERSIAN GULF WATER (SWIMMING OR BATHING) . . . . .

0 DAYS	1-5 DAYS	6-30 DAYS	31 OR MORE
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

These next questions ask about other experiences you may have had up to 1 year before your first deployment, as well as during your first deployment to the Persian Gulf. Specifically, we would like to know if you had any of these experiences at any time during the period from August 1989 through July 1991.

**71. From August 1989 through July 1991, how many preventive vaccines did you receive orally (by mouth) or by injection (by shots)? (Please choose the best answer.)**

- ☐ 0/NONE  
☐ 1-5  
☐ 6-10  
☐ 11 OR MORE

**72. From August 1989 through July 1991, did you receive a vaccine for anthrax immunization?**

- ☐ YES  
☐ NO  
☐ DON'T KNOW

**73. From August 1989 through July 1991, did you receive a vaccine for botulism immunization?**

- ☐ YES  
☐ NO  
☐ DON'T KNOW

**74. From August 1989 through July 1991, how many pyridostigmine bromide tablets did you take in total? (Pyridostigmine bromide tablets are little white pills, sometimes called NAPPs, that come in a foil pack and are used to protect against nerve agents.)**

- ☐ 0/NONE  
☐ 1-10  
☐ 11-30  
☐ 31 OR MORE

The following is a list of problems and complaints that people sometimes have in response to stressful life experiences. Please read each one carefully, then blacken a circle to the right to indicate how much you have been bothered by that problem in the past 6 months. (Please choose the best answer for each question.)

In the past 6 months how much have you been bothered by:

	Time during the past 6 months				
	NOT AT ALL	A LITTLE BIT	MODERATELY	QUITE A BIT	EXTREMELY
75. Repeated, disturbing <u>memories, thoughts, or images</u> of a stressful experience from the past? .....	①	②	③	④	⑤
76. Repeated, disturbing <u>dreams</u> of a stressful experience from the past? .....	①	②	③	④	⑤
77. Suddenly <u>acting or feeling</u> as if a stressful experience from the past <u>were happening again</u> (as if you were reliving it)? .....	①	②	③	④	⑤
78. Feeling <u>very upset</u> when <u>something reminded you</u> of a stressful experience from the past? .....	①	②	③	④	⑤
79. Having <u>physical reactions</u> (e.g., heart pounding, trouble breathing, sweating) when <u>something reminded</u> you of a stressful experience from the past? .....	①	②	③	④	⑤
80. Avoiding <u>thinking about or talking about</u> a stressful experience from the past or avoiding <u>having feelings</u> related to it? .....	①	②	③	④	⑤
81. Avoiding <u>activities or situations</u> because <u>they reminded you</u> of a stressful experience from the past? .....	①	②	③	④	⑤
82. Trouble <u>remembering important parts</u> of a stressful experience from the past? .....	①	②	③	④	⑤
83. <u>Loss of interest</u> in activities that you used to enjoy? .....	①	②	③	④	⑤
84. Feeling <u>distant or cut off</u> from other people? .....	①	②	③	④	⑤
85. Feeling <u>emotionally numb</u> or being unable to have loving feelings for those close to you? .....	①	②	③	④	⑤
86. Feeling as if your <u>future</u> somehow will be <u>cut short</u> ? .....	①	②	③	④	⑤
87. Trouble <u>falling or staying asleep</u> ? .....	①	②	③	④	⑤
88. Feeling <u>irritable</u> or having <u>angry outbursts</u> ? .....	①	②	③	④	⑤
89. Having <u>difficulty concentrating</u> ? .....	①	②	③	④	⑤
90. Being " <u>superalert</u> " or watchful or on guard? .....	①	②	③	④	⑤
91. Feeling <u>jumpy</u> or easily startled? .....	①	②	③	④	⑤

Now, we would like to know about any pregnancies you have had or fathered since the time of your first deployment to the Persian Gulf Theater. Please think about pregnancies from all relationships you may have had. Include live births, stillbirths, tubal or ectopic pregnancies, miscarriages, as well as induced abortions.

92. Since the time of your first deployment, how many of the pregnancies you had or fathered resulted in induced abortions?

- ☐ HAVE NOT HAD OR FATHERED A PREGNANCY SINCE THAT TIME
- ☐ NO PREGNANCIES HAVE HAD OR FATHERED SINCE THAT TIME HAVE RESULTED IN THIS
- ☐ 1 PREGNANCY
- ☐ 2 PREGNANCIES
- ☐ 3 PREGNANCIES
- ☐ 4 OR MORE PREGNANCIES

93. Since the time of your first deployment, how many of the pregnancies you had or fathered resulted in stillbirths, tubal or ectopic pregnancies, or something else like molar pregnancies?

- ☐ HAVE NOT HAD OR FATHERED A PREGNANCY SINCE THAT TIME
- ☐ NO PREGNANCIES HAVE HAD OR FATHERED SINCE THAT TIME HAVE RESULTED IN THIS
- ☐ 1 PREGNANCY
- ☐ 2 PREGNANCIES
- ☐ 3 PREGNANCIES
- ☐ 4 OR MORE PREGNANCIES

94. Since the time of your first deployment, have any of your children been born prematurely, that is, before 36 weeks?

- ☐ YES
- ☐ NO
- ☐ HAVE NOT HAD OR FATHERED ANY CHILDREN SINCE THAT TIME

95. Since the time of your first deployment, have any of your children weighed less than 5 pounds at birth?

- ☐ YES
- ☐ NO
- ☐ HAVE NOT HAD OR FATHERED ANY CHILDREN SINCE THAT TIME

96. Have any of your children born since the time of your first deployment been diagnosed with any birth defect, congenital or hereditary condition, or developmental problem, such as slow or abnormal physical, intellectual, or mental growth?

- ☐ YES
- ☐ NO
- ☐ HAVE NOT HAD OR FATHERED ANY CHILDREN SINCE THAT TIME

97. How many children under age 17 currently live with you? Please include in your count adopted, step, and foster children who live with you, as well as your own biological children.

- ☐ NO CHILDREN UNDER 17 LIVE WITH ME
- ☐ 1 CHILD
- ☐ 2 CHILDREN
- ☐ 3 CHILDREN
- ☐ 4 CHILDREN
- ☐ 5 OR MORE CHILDREN

*The next question asks about tobacco use.*

98. Think about the past 30 days. How many cigarettes did you usually smoke on a **TYPICAL day**?

- ☐ ABOUT 3 OR MORE PACKS A DAY (MORE THAN 55 CIGARETTES)
- ☐ ABOUT 2-1/2 PACKS A DAY (46-55 CIGARETTES)
- ☐ ABOUT 2 PACKS A DAY (36-45 CIGARETTES)
- ☐ ABOUT 1-1/2 PACKS A DAY (26-35 CIGARETTES)
- ☐ ABOUT 1 PACK A DAY (16-25 CIGARETTES)
- ☐ ABOUT 1/2 PACK A DAY (6-15 CIGARETTES)
- ☐ 1-5 CIGARETTES A DAY
- ☐ LESS THAN 1 CIGARETTE A DAY, ON THE AVERAGE
- ☐ DID NOT SMOKE ANY CIGARETTES IN THE PAST 30 DAYS
- ☐ NEVER SMOKED CIGARETTES IN MY LIFE

Next, we would like to know about your use of alcohol. By "alcohol," we mean beer, wine, wine coolers, and hard liquor, such as bourbon, gin, vodka, and so on. Please answer ALL of the following alcohol use questions even if you don't drink or you're not a regular drinker.

99. During the past 30 days, on how many days did you drink one or more drinks of alcoholic beverages? Count as a drink a can or bottle of beer; a wine cooler or a glass of wine, champagne, or sherry; or a shot of liquor or a mixed drink or cocktail.

- ☐ 28-30 DAYS (ABOUT EVERY DAY)
- ☐ 20-27 DAYS (5-6 DAYS A WEEK, AVERAGE)
- ☐ 11-19 DAYS (3-4 DAYS A WEEK, AVERAGE)
- ☐ 4-10 DAYS (1-2 DAYS A WEEK, AVERAGE)
- ☐ 2-3 DAYS IN THE PAST 30 DAYS
- ☐ ONCE IN THE PAST 30 DAYS
- ☐ NONE IN THE PAST 30 DAYS
- ☐ NEVER DRANK ALCOHOLIC BEVERAGES IN MY LIFE

100. Think about the days when you drank in the past 30 days. How many drinks did you usually drink on a TYPICAL day? Count as a drink a can or bottle of beer; a wine cooler or a glass of wine, champagne, or sherry; or a shot of liquor or a mixed drink or cocktail.

- ☐ 9 DRINKS OR MORE
- ☐ 8 DRINKS
- ☐ 7 DRINKS
- ☐ 6 DRINKS
- ☐ 5 DRINKS
- ☐ 4 DRINKS
- ☐ 3 DRINKS
- ☐ 2 DRINKS
- ☐ 1 DRINK
- ☐ DID NOT DRINK ALCOHOLIC BEVERAGES IN THE PAST 30 DAYS
- ☐ NEVER DRANK ALCOHOLIC BEVERAGES IN MY LIFE

101. During the past 30 days, on how many days did you have 5 or more drinks on the same occasion? By "occasion," we mean at the same time or within a couple of hours of each other.

- ☐ 28-30 DAYS (ABOUT EVERY DAY)
- ☐ 20-27 DAYS (5-6 DAYS A WEEK, AVERAGE)
- ☐ 11-19 DAYS (3-4 DAYS A WEEK, AVERAGE)
- ☐ 4-10 DAYS (1-2 DAYS A WEEK, AVERAGE)
- ☐ 2-3 DAYS IN THE PAST 30 DAYS

- ☐ ONCE IN THE PAST 30 DAYS
- ☐ DRANK DURING THE PAST 30 DAYS, BUT NEVER HAD 5 OR MORE DRINKS ON THE SAME OCCASION
- ☐ DID NOT DRINK ALCOHOLIC BEVERAGES IN THE PAST 30 DAYS
- ☐ NEVER DRANK ALCOHOLIC BEVERAGES IN MY LIFE

102. In your entire life, has a doctor ever suggested that you stop drinking because of a problem with your health related to your drinking?

- ☐ No → GO TO QUESTION 103
- ☐ YES
- ↳ HAVE YOU HAD ANY DRINKS OF ALCOHOL SINCE THAT TIME?
  - ☐ YES
  - ☐ NO

*We are now going to ask about experiences you may have had using alcohol during the past 6 months.*

103. Were you drinking, high from alcohol, or hung over while you were working, going to school, or taking care of other responsibilities, more than once?

- ☐ YES
- ☐ NO

104. Were you missing or late for work, school, or other responsibilities because you were drinking or hung over, more than once?

- ☐ YES
- ☐ NO

105. Did you have a problem getting along with other people while you were drinking more than once?

- ☐ YES
- ☐ NO

*The next few questions ask about your physical and mental health during the past 6 months, as well as during your entire life.*

106. During the past 6 months, have you had three or more physical problems that have not been adequately understood or explained by your doctor?

- ☐ YES
- ☐ NO

107. In your entire life, have you ever seen a physician or other professional like a psychologist or social worker, for a psychiatric disorder, illness, or emotional or mental health problem, such as anxiety, depression, alcohol, or drug abuse?

- ☐ YES
- ☐ NO

108. During the past 6 months, how many times did you visit a mental health professional for a psychiatric disorder, illness, or emotional or mental health problem, such as anxiety, depression, or alcohol or drug abuse?

- ☐ 1 TIME
- ☐ 2 OR 3 TIMES
- ☐ MORE THAN 3 TIMES
- ☐ HAVE NOT VISITED A MENTAL HEALTH PROFESSIONAL IN THE PAST 6 MONTHS
- ☐ HAVE NEVER VISITED A MENTAL HEALTH PROFESSIONAL

109. In your entire life, have you ever been hospitalized for an emotional or psychiatric problem?

- ☐ YES
- ☐ NO

*These next questions are about your work and your life in general.*

110. In the past 30 days, how many days have you missed from your job for any reason? (Please do not include scheduled vacation time.)

- ☐ HAVE NOT WORKED FOR PAY IN THE PAST 30 DAYS
- ☐ 0 DAYS
- ☐ 1-2 DAYS
- ☐ 3-5 DAYS
- ☐ 6-7 DAYS
- ☐ 8-10 DAYS
- ☐ 11 OR MORE DAYS

111. In the past 30 days, how many days have you missed a day from work, or were not able to carry out your usual activities because of emotional difficulties or physical health problems?

- ☐ 0 DAYS
- ☐ 1-2 DAYS
- ☐ 3-5 DAYS
- ☐ 6-7 DAYS
- ☐ 8-10 DAYS
- ☐ 11 OR MORE DAYS

112. In the past 30 days, how many days were you able to work and carry out your normal activities, but had to cut down on what you did or did not get as much done as usual because of emotional difficulties or physical health problems?

- ☐ 0 DAYS
- ☐ 1-2 DAYS
- ☐ 3-5 DAYS
- ☐ 6-7 DAYS
- ☐ 8-10 DAYS
- ☐ 11 OR MORE DAYS

113. Have you been unemployed for 3 months or longer since July 1991?

- ☐ YES
- ☐ NO

114. Was this unemployment due to emotional difficulties or physical health problems?

- ☐ YES
- ☐ NO
- ☐ WAS NOT UNEMPLOYED FOR 3 MONTHS OR LONGER

115. Which of the following best describes your current work situation? (Please choose the best answer.)

- ☐ WORKING FOR PAY  
(INCLUDES ACTIVE-DUTY MILITARY)
- ☐ HAVE A JOB, BUT NOT WORKING  
(BECAUSE OF MATERNITY LEAVE, BAD WEATHER, STRIKE, SEASONAL WORK, TEMPORARY LAYOFF, ETC.)
- ☐ UNEMPLOYED OR PERMANENTLY LAID OFF AND LOOKING FOR WORK
- ☐ UNEMPLOYED OR PERMANENTLY LAID OFF AND NOT LOOKING FOR WORK
- ☐ KEEPING HOUSE FULL-TIME
- ☐ IN SCHOOL OR TRAINING PROGRAM
- ☐ RETIRED
- ☐ DISABLED

116. In the past 3 months, how many hours per week did you usually work for pay? (Please choose the best answer.)

- ☐ HAVE NOT WORKED FOR PAY DURING PAST 3 MONTHS
- ☐ 1-9 HOURS PER WEEK
- ☐ 10-14 HOURS PER WEEK
- ☐ 15-19 HOURS PER WEEK
- ☐ 20-24 HOURS PER WEEK
- ☐ 25-29 HOURS PER WEEK
- ☐ 30-34 HOURS PER WEEK
- ☐ 35-40 HOURS PER WEEK
- ☐ MORE THAN 40 HOURS PER WEEK

117. Do you have an emotional or physical disability that currently keeps you from working?

- ☐ YES
- ☐ NO

118. Currently, in which component of the Military do you serve? (Please choose the best answer.)

- ☐ I DO NOT CURRENTLY SERVE IN THE MILITARY
- ☐ ACTIVE ARMY (USA)
- ☐ ARMY NATIONAL GUARD (ARNG)
- ☐ ARMY RESERVE (USAR)
- ☐ ACTIVE NAVY (USN)
- ☐ NAVAL RESERVE (USNR)
- ☐ ACTIVE AIR FORCE (USAF)
- ☐ AIR NATIONAL GUARD (ANG)
- ☐ AIR FORCE RESERVE (USAFR)
- ☐ ACTIVE MARINE CORP (USMC)
- ☐ MARINE CORPS RESERVE (USMCR)

119. In your entire life, how many years have you served on Active Duty? Do not include Reserve/Guard years. (Please choose the best answer.)

- ☐ HAVE NOT SERVED ON ACTIVE DUTY
- ☐ LESS THAN 6 MONTHS
- ☐ AT LEAST 6 MONTHS, BUT LESS THAN 1 YEAR
- ☐ AT LEAST 1 YEAR, BUT LESS THAN 2 YEARS
- ☐ AT LEAST 2 YEARS, BUT LESS THAN 3 YEARS
- ☐ AT LEAST 3 YEARS, BUT LESS THAN 4 YEARS
- ☐ AT LEAST 4 YEARS, BUT LESS THAN 5 YEARS
- ☐ AT LEAST 5 YEARS, BUT LESS THAN 10 YEARS
- ☐ AT LEAST 10 YEARS, BUT LESS THAN 20 YEARS
- ☐ 20 OR MORE YEARS

120. In your entire life, how many years have you served in the Guard or Reserves? Do not include Active-Duty years. (Please choose the best answer.)

- ☐ HAVE NEVER SERVED IN THE GUARD OR RESERVES
- ☐ LESS THAN 6 MONTHS
- ☐ AT LEAST 6 MONTHS, BUT LESS THAN 1 YEAR
- ☐ AT LEAST 1 YEAR, BUT LESS THAN 2 YEARS
- ☐ AT LEAST 2 YEARS, BUT LESS THAN 3 YEARS
- ☐ AT LEAST 3 YEARS, BUT LESS THAN 4 YEARS
- ☐ AT LEAST 4 YEARS, BUT LESS THAN 5 YEARS
- ☐ AT LEAST 5 YEARS, BUT LESS THAN 10 YEARS
- ☐ AT LEAST 10 YEARS, BUT LESS THAN 20 YEARS
- ☐ 20 OR MORE YEARS

121. What is your current marital situation? (Please choose the best answer.)

- ☐ NOT MARRIED, BUT LIVING AS MARRIED
- ☐ MARRIED
- ☐ SEPARATED AND NOT LIVING AS MARRIED
- ☐ DIVORCED AND NOT LIVING AS MARRIED
- ☐ WIDOWED AND NOT LIVING AS MARRIED
- ☐ SINGLE, NEVER MARRIED, AND NOT LIVING AS MARRIED

122. What is the month, day, and year of your birth? Please be sure to blacken the circles under the boxes in which you write in the date.

Month		Day		Year	
0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

123. Are you male or female?

- ☐ MALE
- ☐ FEMALE

124. Are you of Spanish or Hispanic origin or descent? (Please choose the best answer.)

- ☐ NO (NOT SPANISH OR HISPANIC)
- ☐ YES, PUERTO RICAN
- ☐ YES, MEXICAN OR MEXICAN-AMERICAN OR CHICANO
- ☐ YES, CUBAN
- ☐ YES, CENTRAL OR SOUTH AMERICAN
- ☐ YES, OTHER SPANISH OR HISPANIC ORIGIN

125. Which of these categories best describes you?

- ☐ AMERICAN INDIAN/ESKIMO/ALEUT
- ☐ BLACK/AFRICAN-AMERICAN
- ☐ ASIAN/CHINESE/JAPANESE/KOREAN/  
FILIPINO/ASIAN/INDIAN/PACIFIC ISLANDER
- ☐ WHITE/CAUCASIAN
- ☐ OTHER

126. What is your highest level of education now? (Please choose the best answer.)

- ☐ HAVE NOT YET GRADUATED FROM HIGH SCHOOL
- ☐ GED OR ABE CERTIFICATE
- ☐ HIGH SCHOOL GRADUATE
- ☐ TRADE OR TECHNICAL SCHOOL GRADUATE
- ☐ SOME COLLEGE BUT NOT A 4-YEAR DEGREE
- ☐ 4-YEAR COLLEGE DEGREE (BA, BS, OR EQUIVALENT)
- ☐ GRADUATE OR PROFESSIONAL STUDY BUT NO  
GRADUATE DEGREE
- ☐ GRADUATE OR PROFESSIONAL DEGREE

127. During the past 12 months, approximately how much income before taxes and deductions did you personally earn from jobs or other employment (including self-employment)? Please, only include money from wages, salaries, tips, or bonuses that you received while working for pay. As with all information you provide on this survey, your answer to this question is kept confidential.

- ☐ 0 - \$4,999
- ☐ \$5,000 - \$9,999
- ☐ \$10,000 - \$14,999
- ☐ \$15,000 - \$19,999
- ☐ \$20,000 - \$29,999
- ☐ \$30,000 - \$39,999
- ☐ \$40,000 - \$49,999
- ☐ \$50,000 - \$74,999
- ☐ \$75,000 - \$99,999
- ☐ \$100,000 - \$149,999
- ☐ \$150,000 - \$200,000
- ☐ MORE THAN \$200,000

128. During the past 12 months, approximately how much income before taxes and deductions was received by all family members who live with you? Please include not only money from wages, tips, and bonuses, but also social security, retirement income, unemployment or disability payments, public assistance, etc. Also include income from interest, dividends, net income from business, farm, or rent, and any other money income your family received.

- ☐ 0 - \$4,999
- ☐ \$5,000 - \$9,999
- ☐ \$10,000 - \$14,999
- ☐ \$15,000 - \$19,999
- ☐ \$20,000 - \$29,999
- ☐ \$30,000 - \$39,999
- ☐ \$40,000 - \$49,999
- ☐ \$50,000 - \$74,999
- ☐ \$75,000 - \$99,999
- ☐ \$100,000 - \$149,999
- ☐ \$150,000 - \$200,000
- ☐ MORE THAN \$200,000

129. How many individuals, including yourself, are supported by the family income you reported in Question 128?

- ☐ 1 PERSON
- ☐ 2 PEOPLE
- ☐ 3 PEOPLE
- ☐ 4 PEOPLE
- ☐ 5 PEOPLE
- ☐ 6 PEOPLE
- ☐ 7 PEOPLE
- ☐ 8 PEOPLE
- ☐ 9 PEOPLE
- ☐ 10 OR MORE PEOPLE

130. Because we may wish to talk further with some of you at another time, we would like to obtain your home phone number. Please enter your phone number, including area code, in the grid below, remembering to blacken the circle under each number. If you are currently living outside the United States, but expect to be living in the U.S. within the next 6 months, please enter your permanent home phone number.

A.

Area Code			Phone Number								
0	0	0	-	0	0	0	-	0	0	0	0
1	1	1	-	1	1	1	-	1	1	1	1
2	2	2	-	2	2	2	-	2	2	2	2
3	3	3	-	3	3	3	-	3	3	3	3
4	4	4	-	4	4	4	-	4	4	4	4
5	5	5	-	5	5	5	-	5	5	5	5
6	6	6	-	6	6	6	-	6	6	6	6
7	7	7	-	7	7	7	-	7	7	7	7
8	8	8	-	8	8	8	-	8	8	8	8
9	9	9	-	9	9	9	-	9	9	9	9

B. Please blacken the circle next to the description that best describes your current situation:

- ☐ I CURRENTLY RESIDE IN THE U.S. AND EXPECT TO BE RESIDING IN THE U.S. FOR AT LEAST THE NEXT 6 MONTHS.
- ☐ I CURRENTLY RESIDE IN THE U.S. BUT DO NOT EXPECT TO BE RESIDING IN THE U.S. FOR AT LEAST 6 MONTHS.
- ☐ I AM CURRENTLY RESIDING OUTSIDE THE U.S. BUT EXPECT TO RETURN TO THE U.S. WITHIN THE NEXT 6 MONTHS AND HAVE INCLUDED MY PERMANENT HOME PHONE NUMBER.
- ☐ I AM CURRENTLY RESIDING OUTSIDE THE U.S. BUT EXPECT TO RETURN TO THE U.S. WITHIN THE NEXT 6 MONTHS AND DO NOT HAVE A PERMANENT HOME PHONE NUMBER.



*The next section is for women only. If you are a woman, please complete this last section. If you are a man, you may turn to the last page of the questionnaire for instructions regarding how to get more information on services available to Gulf War veterans. Thank you for completing this questionnaire.*

*This section asks questions about women's health issues, including health care and medical conditions.*

131. During the past 6 months, did you have any of these conditions? Include times you have had these conditions even if you didn't seek medical care.

- A. ☐ HAVE HAD A HYSTERECTOMY OR AM POSTMENOPAUSAL → *Go to QUESTION 132*

In the past 6 months, I have had:

Yes No

- B. PREMENSTRUAL SYMPTOMS OR PAIN (PMS, PREMENSTRUAL CRAMPS) ..... ☐ ..... ☐
- C. CRAMPS OR PAIN DURING MENSTRUAL PERIOD REQUIRING MEDICATION OR TIME OFF FROM WORK ..... ☐ ..... ☐
- D. HEAVY PERIODS (EXCESSIVE MENSTRUAL FLOW) ..... ☐ ..... ☐
- E. LIGHT PERIODS (HARDLY ANY MENSTRUAL FLOW) ..... ☐ ..... ☐
- F. ONE MISSED PERIOD ..... ☐ ..... ☐
- G. NO MENSTRUAL PERIODS FOR 2 OR MORE MONTHS ..... ☐ ..... ☐
- H. A PERIOD THAT LASTED LONGER THAN A WEEK ..... ☐ ..... ☐
- I. TOO MANY PERIODS (TIME BETWEEN PERIODS WAS TOO SHORT) ..... ☐ ..... ☐
- J. BLEEDING BETWEEN PERIODS ..... ☐ ..... ☐
- K. ENDOMETRIOSIS ..... ☐ ..... ☐
- L. PROBLEM WITH UTERUS (WOMB) OTHER THAN ENDOMETRIOSIS ..... ☐ ..... ☐

132. During the past 6 months, did you have any of the following conditions? Include times you have had these conditions even if you didn't seek medical care.

In the past 6 months, I have had:

Yes No

- A. DISCHARGE FROM BREAST ..... ☐ ..... ☐
- B. BREAST LUMP ..... ☐ ..... ☐
- C. YEAST OR VAGINAL INFECTION ..... ☐ ..... ☐
- D. VAGINAL RASH, DISCHARGE, OR OTHER DISORDER EXCEPT YEAST INFECTION OR SEXUALLY TRANSMITTED DISEASE .. ☐ ..... ☐
- E. ABDOMINAL PAIN (FROM KNOWN CYSTS) ..... ☐ ..... ☐
- F. ABDOMINAL PAIN (FROM UNKNOWN CAUSE) ..... ☐ ..... ☐

---

133. A Pap smear is when a health care provider inserts a swab into your vagina to scrape cells from the cervix. Have you ever had a Pap smear where the result was NOT normal?

- ☐ YES
- ☐ No
- ☐ NEVER HAD A PAP SMEAR
- ☐ DON'T KNOW

134. Since the time of your first deployment, have you or a health care provider ever found a lump or other abnormality in your breast?

- ☐ YES
- ☐ No

---

Sometimes when people have participated in a study like the Gulf War Veterans Health Survey, they are interested in following up on some of the issues that they have been asked about in the study with someone who is professionally trained to deal with these kinds of issues. There are many resources available to military personnel who served during the Persian Gulf War. Below, we have provided two toll-free numbers and two Internet addresses for resources that provide a wide variety of information about Persian Gulf War veteran programs and services. Information available through these sources ranges from providing answers to veterans' frequently asked questions, to information on the treatment services (including mental health and physical health services) that are available in your area. These numbers and Internet addresses are also provided in the introductory letter that came with this questionnaire.

#### **Toll-Free Numbers**

For current active-duty military personnel—Department of Defense Persian Gulf Veterans Hotline:

1-800-796-9699

For other Gulf War veterans—VA Persian Gulf Information Helpline:

1-800-PGW-VETS (or 1-800-749-8387)

#### **Internet Addresses for Informational Sites on the World Wide Web**

<http://www.va.gov/health/envIRON/persgulf.htm>

<http://www.gulflink.osd.mil/medical/#cbid>



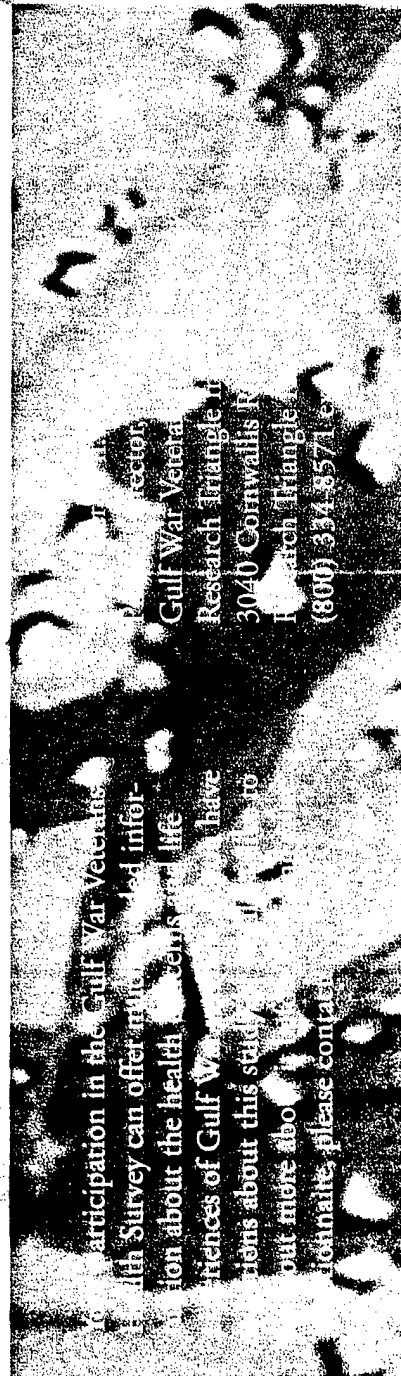
*Thank you for completing  
this questionnaire.*

## APPENDIX B

1. Informational Brochure for Gulf War Veterans Health Survey
  - ◆ Cover graphic
  - ◆ Text for Gulf War veterans who are currently on active duty
  - ◆ Text for Gulf War veterans who are currently civilians
2. Consent Form/Letter
  - ◆ For Gulf War veterans who are currently on active duty
  - ◆ For Gulf War veterans who are currently civilians

# The Gulf War Veterans Health Survey

*Informational Brochure*



Participation in the Gulf War Veterans Health Survey can offer military veterans information about the health concerns and life experiences of Gulf War veterans. If you have questions about this study or would like to learn more about it, please contact your local VA office or write to:

Dr. Robert H. Baran, Director  
Gulf War Veterans Health Study  
Research Triangle Institute  
3040 Cornwallis Road  
Research Triangle Park, NC 27709  
(800) 334-8571 ext. 210

## **WHAT IS THE GULF WAR VETERANS HEALTH SURVEY?**

Duke University Medical Center and the Research Triangle Institute of North Carolina, a not for profit research organization, are conducting a research study to learn more about Gulf War Illnesses and the overall health of Gulf War veterans. You are one of 10,000 men and women being contacted about participating in the study because you served in the Persian Gulf during Operation Desert Shield/Desert Storm. This study will gather information from Gulf War veterans about their military experiences, Persian Gulf experiences, physical health, and emotional health.

## **WHY IS THIS STUDY IMPORTANT?**

Of the nearly 700,000 military personnel who served in Operation Desert Shield/Desert Storm, over 100,000 have reported health concerns to the Department of Veterans Affairs or the Department of Defense. The cause of many of these health problems are not currently known. Recent research has begun to better document, describe, and identify potential causes for these health problems, but much remains to be learned. Our study builds upon these previous studies in two important ways: (1) we examine a broader range of factors that might have affected the health of Gulf War veterans and (2) we have selected individuals for the study to represent *all* military personnel who served in the Gulf War. We

have chosen this approach to insure, to the best of our ability, that the information gathered will provide medical professionals, scientists, the Veterans Affairs, and military officials with a representation of the experiences and health concerns of *all* veterans that served in Operation Desert Shield/Desert Storm.

## **WHY IS YOUR PARTICIPATION IMPORTANT?**

Because we are trying to represent the experiences of *all* Gulf War veterans, *your participation is especially important.* Your responses will represent not only your experiences, but also the experiences of many other Gulf War Veterans who are similar to you in some way such as gender or branch of service.

## **WHAT DOES PARTICIPATING INVOLVE?**

In about one week you will receive a questionnaire in the mail to complete along with necessary instructions. The questionnaire should take no longer than 1 hour to complete.

## **WHAT WILL YOU GAIN BY PARTICIPATING?**

By completing the questionnaire, you will be helping us to better understand the health concerns of Gulf War Veterans. It is our

hope that findings from this study will ultimately lead to the development of better treatments and services for Gulf War veterans and will help prevent similar problems in future deployments.

## **WILL YOUR ANSWERS BE KEPT CONFIDENTIAL?**

All information collected from you in this study will be kept strictly confidential. Your name will never be associated directly with the answers that you give. Any results that are reported from the study will refer to group information only. Only research staff conducting the study will have access to your answers. No military or VA personnel will see your answers or even know whether or not you participated in the study.

## **WHAT IS THE GULF WAR VETERANS HEALTH SURVEY?**

Duke University Medical Center and the Research Triangle Institute of North Carolina, a not for profit research organization, are conducting a research study to learn more about Gulf War Illnesses and the overall health of Gulf War veterans. You are one of 10,000 men and women being contacted about participating in the study because you served in the Persian Gulf during Operation Desert Shield/Desert Storm. This study will gather information from Gulf War veterans about their military experiences, Persian Gulf experiences, physical health, and emotional health.

## **WHY IS THIS STUDY IMPORTANT?**

Of the nearly 700,000 military personnel who served in Operation Desert Shield/Desert Storm, over 100,000 have reported health concerns to the Department of Veterans Affairs or the Department of Defense. The cause of many of these health problems are not currently known. Recent research has begun to better document, describe, and identify potential causes for these health problems, but much remains to be learned. Our study builds upon these previous studies in two important ways: (1) we examine a broader range of factors that might have affected the health of Gulf War veterans and (2) we have selected individuals for the study to represent *all* military personnel who served in the Gulf War. We

have chosen this approach to insure, to the best of our ability, that the information gathered will provide medical professionals, scientists, the Veterans Affairs, and military officials with a representation of the experiences and health concerns of *all* veterans that served in Operation Desert Shield/Desert Storm.

## **WHY IS YOUR PARTICIPATION IMPORTANT?**

Because we are trying to represent the experiences of *all* Gulf War veterans, *your participation is especially important.* Your responses will represent not only your experiences, but also the experiences of many other Gulf War Veterans who are similar to you in some way such as gender or branch of service.

## **WHAT DOES PARTICIPATING INVOLVE?**

In about one week you will receive a questionnaire in the mail to complete along with necessary instructions. The questionnaire should take no longer than 1 hour to complete.

## **WHAT WILL YOU GAIN BY PARTICIPATING?**

By completing the questionnaire, you will be helping us to better understand the health concerns of Gulf War Veterans. It is our

hope that findings from this study will ultimately lead to the development of better treatments and services for Gulf War veterans and will help prevent similar problems in future deployments. Additionally, as a token of our appreciation, when you return your questionnaire, you will be entered into a drawing to win one of 10 cash prizes (ranging from \$150 to \$500 depending on how quickly you complete and return your questionnaire).

## **WILL YOUR ANSWERS BE KEPT CONFIDENTIAL?**

All information collected from you in this study will be kept strictly confidential. Your name will never be associated directly with the answers that you give. Any results that are reported from the study will refer to group information only. Only research staff conducting the study will have access to your answers. No military or VA personnel will see your answers or even know whether or not you participated in the study.



DUKE UNIVERSITY MEDICAL CENTER  
Gulf War Veterans Health Survey

[Insert Anticipated Date of Mailing]

Dear Gulf War Veteran:

Duke University Medical Center and the Research Triangle Institute of North Carolina, a nonprofit research organization, are conducting a research study funded by the U.S. Army to learn more about Gulf War Illnesses and health problems experienced by Gulf War veterans.

You are one of 10,000 men and women who have been contacted about participating in this study because you served in the Persian Gulf between August 1990 and July 1991. Because it is impossible for us to survey all Gulf War veterans, we have selected individuals for this research so that their responses can represent many other veterans who are similar in gender and other characteristics. You have been selected as one of those individuals and therefore your participation is very important to insure that we can accurately represent the views of all Gulf War veterans. However, your participation is completely voluntary. Your decision on whether or not to participate will in no way affect health care or other benefits that you or your family receive or are entitled to. You only need to complete the enclosed survey if you wish to be enrolled in this research study.

The survey asks questions about your military history, your Persian Gulf experiences, stressful experiences you may have had in your life, your physical health, and your emotional functioning. Some of these questions may make you feel somewhat uncomfortable or stimulate other feelings such as sadness. You may skip any questions you do not want to answer. There are no direct benefits to you from answering these questions but results from the study could help improve treatment of Gulf War veterans and prevent health problems in future conflicts. Below, we have included toll-free numbers that you can call if you would like to discuss any questions or concerns about your experiences as a Gulf War veteran.

Please complete the questionnaire in private and do not show it to anyone. Please read the instructions in the questionnaire carefully. *USE ONLY A SOFT LEAD (NO. 2) PENCIL.* We have included a study souvenir pencil that can be used to complete the questionnaire. We expect the questionnaire will take less than one hour to complete. In order to assure complete confidentiality you will mail your completed questionnaire directly to a civilian scoring contractor. Your name will never be associated with the responses you give. Any identifying information that would link you to your answers will be kept separate from your answers and stored in a secure location at the Research Triangle Institute. Any results that are reported from this study will refer to group data only. Only the research staff at the Research Triangle Institute, Duke University Medical Center and National Computer Systems will have access to the study data. No military personnel will see your answers or even know whether or not you participated in the study. When you have finished, seal the questionnaire in the enclosed envelope and put it into the US mail to send to National Computer Systems. No postage is required.

Some veterans who complete this survey will be contacted again and asked to participate in a telephone interview that is a second phase of the current study. The second phase telephone interview will help us get more detailed information on the health problems of Gulf War veterans and factors contributing to these. Additionally, participants in this mail survey may be asked in the future to participate in other related studies. You can decide at that time if you want to take part in the second phase telephone interview or any other related studies. Completing this mail survey does not mean that you agree to participate in the second phase telephone interview or any other related studies that may be conducted in the future.

If you have any questions about this survey, you may call Dr. Robert Bray at 1-800-334-8571, x6433 or Dr. John Fairbank at 919-687-4686, x265. If you have any questions about your rights as a research participant, you may call Dr. Steven Garfinkel at 1-800-334-8571, x6382.

Sincerely,

John A. Fairbank, Ph.D.  
Associate Professor of Medical Psychology, Duke University Medical Center

Robert M. Bray, Ph.D.  
Senior Research Psychologist, Research Triangle Institute

#### **GULF WAR INFORMATION SOURCES**

*Toll-free information lines:*

1-800-796-9699 (for current active duty military personnel)

1-800-749-8387 (for other Gulf War veterans)

*Informational sites on the World Wide Web:*

<http://www.va.gov/health/envIRON/persgulf.htm>



DUKE UNIVERSITY MEDICAL CENTER  
Gulf War Veterans Health Survey

[Insert Anticipated Date of Mailing]

Dear Gulf War Veteran:

Duke University Medical Center and the Research Triangle Institute of North Carolina, a nonprofit research organization, are conducting a research study funded by the U.S. Army to learn more about Gulf War Illnesses and health problems experienced by Gulf War veterans.

You are one of 10,000 men and women who have been contacted about participating in this study because you served in the Persian Gulf between August 1990 and July 1991. Because it is impossible for us to survey all Gulf War veterans, we have selected individuals for this research so that their responses can represent many other veterans who are similar in gender and other characteristics. You have been selected as one of those individuals and therefore your participation is very important to insure that we can accurately represent the views of all Gulf War veterans. However, your participation is completely voluntary. Your decision on whether or not to participate will in no way affect health care or other benefits that you or your family receive or are entitled to. You only need to complete the enclosed survey if you wish to be enrolled in this research study.

The survey asks questions about your military history, your Persian Gulf experiences, stressful experiences you may have had in your life, your physical health, and your emotional functioning. Some of these questions may make you feel somewhat uncomfortable or stimulate other feelings such as sadness. You may skip any questions you do not want to answer. There are no direct benefits to you from answering these questions but results from the study could help improve treatment of Gulf War veterans and prevent health problems in future conflicts. Below, we have included toll-free numbers that you can call if you would like to discuss any questions or concerns about your experiences as a Gulf War veteran.

Please complete the questionnaire in private and do not show it to anyone. Please read the instructions in the questionnaire carefully. *USE ONLY A SOFT LEAD (NO. 2) PENCIL.* We have included a study souvenir pencil that can be used to complete the questionnaire. We expect the questionnaire will take less than one hour to complete. In order to assure complete confidentiality you will mail your completed questionnaire directly to a civilian scoring contractor. Your name will never be associated with the responses you give. Any identifying information that would link you to your answers will be kept separate from your answers and stored in a secure location at the Research Triangle Institute. Any results that are reported from this study will refer to group data only. Only the research staff at the Research Triangle Institute, Duke University Medical Center and National Computer Systems will have access to the study data. No military personnel will see your answers or even know whether or not you participated in the study. When you have finished, seal the questionnaire in the enclosed envelope and put it into the US mail to send to National Computer Systems. No postage is required.

Once we have received your questionnaire, as a token of our appreciation, you will be entered into a drawing to win one of 10 cash prizes. To preserve confidentiality, the identification number on your survey rather than your name will be used in this drawing. Completed questionnaires returned by [insert Month day, 2001] will be entered into the drawing for two Grand Prizes of \$500. Those returned by [insert Month day, 2001] will be entered into the drawing for four First Prizes of \$250, and those returned by [insert Month day, 2001] will be entered into the drawing for four Second Prizes of \$150. Drawings will be held within 4 weeks of the above-specified deadlines. Your chances of winning a prize (i.e., 10/10,000 or better) depend on how many veterans complete and return their questionnaires by these deadlines. If you are entered into a drawing and are not

selected, you will automatically be entered in the drawing for the next round of prizes. If you are selected in one of the drawings, you will receive notification by mail along with a check for your prize. Your responses to this survey will, however, remain confidential because no one individual will ever have access to your name, identification number, and survey responses.

Some veterans who complete this survey will be contacted again and asked to participate in a telephone interview that is a second phase of the current study. The second phase telephone interview will help us get more detailed information on the health problems of Gulf War veterans and factors contributing to these. Additionally, participants in this mail survey may be asked in the future to participate in other related studies. You can decide at that time if you want to take part in the second phase telephone interview or any other related studies. Completing this mail survey does not mean that you agree to participate in the second phase telephone interview or any other related studies that may be conducted in the future.

If you have any questions about this survey, you may call Dr. Robert Bray at 1-800-334-8571, x6433 or Dr. John Fairbank at 919-687-4686, x265. If you have any questions about your rights as a research participant, you may call Dr. Steven Garfinkel at 1-800-334-8571, x6382.

Sincerely,

John A. Fairbank, Ph.D.  
Associate Professor of Medical Psychology, Duke University Medical Center

Robert M. Bray, Ph.D.  
Senior Research Psychologist, Research Triangle Institute

#### **GULF WAR INFORMATION SOURCES**

*Toll-free information lines:*

1-800-796-9699 (for current active duty military personnel)

1-800-749-8387 (for other Gulf War veterans)

*Informational sites on the World Wide Web:*

<http://www.va.gov/health/envIRON/persgulf.htm>

## APPENDIX C

### Bibliography of Literature on Gulf War Illnesses (Draft)

## Bibliography

- Amato, A. A., McVey, A., Cha, C., Matthews, E. C., Jackson, C. E., Kleingunther, R., Worley, L., Cornman, E., & Kagan-Hallet, K. (1997). Evaluation of neuromuscular symptoms in veterans of the Persian Gulf War. Neurology, 48(1), 4-12.
- Anger, W. K., Storzbach, D., Binder, L. M., Campbell, K. A., Rohlman, D. S., McCauley, L., Kovera, C. A., & Davis, K. L. (1999). Neurobehavioral deficits in Persian Gulf veterans: Evidence from a population-based study. Journal of the International Neuropsychological Society, 5(3), 203-212.
- Artiss, K. L. (2000). The combat soldier. Military Medicine, 165(1), 33-40.
- Asa, P. B., Cao, Y., & Garry, R. F. (2000). Antibodies to squalene in Gulf War syndrome. Experimental & Molecular Pathology, 68(1), 55-64.
- Axelrod, B. N., & Milner, I. B. (1997). Neuropsychological findings in a sample of Operation Desert Storm veterans. Journal of Neuropsychiatry & Clinical Neurosciences, 9(1), 23-8.
- Baker, D. G., Mendenhall, C. L., Simbartl, L. A., Magain, L. K., & Steinberg, J. L. (1997). Relationship between posttraumatic stress disorder and self-reported physical symptoms in Persian Gulf War veterans. Archives of Internal Medicine, 157(18), 2076-2078.
- Barak, Y., Bodner, E., Klayman, N., Ring, A., & Elizur, A. (2000). Anxiety among Israeli soldiers during the Gulf War. European Archives of Psychiatry & Clinical Neuroscience, 250(3), 148-151.
- Bartone, P. T. (1999). Hardiness protects against war-related stress in Army Reserve forces. Consulting Psychology Journal: Practice & Research, 51(2), 72-82.
- Beale, P. (1997). Gulf War illness. Why it took so long to decide to investigate [letter] [see comments]. BMJ, 314(7086), 1041.
- Bell, I. R., Warg-Damiani, L., Baldwin, C. M., Walsh, M. E., & Schwartz, G. E. (1998). Self-reported chemical sensitivity and wartime chemical exposures in Gulf War veterans with and without decreased global health ratings. Military Medicine, 163(11), 725-32.
- Bernstein, D., Kelley, T., & Fumento, M. (1998). Is the Gulf War Syndrome real? S. Nolen-Hoeksema (Editor), Clashing views on abnormal psychology: A Taking Sides custom reader. (pp. 106-126). Guilford, CT: Dushkin/Mcgraw-Hill.
- Berry, C. (1997). The Gulf War syndrome [editorial]. Journal of Clinical Pathology, 50(5), 360.
- Binder, L. M., Storzbach, D., Anger, W. K., Campbell, K. A., Rohlman, D. S., & Numerous contributors. (1999). Subjective cognitive complaints, affective distress, and objective cognitive performance in Persian Gulf War veterans. Archives of Clinical Neuropsychology, 14(6), 531-536.
- Bisson, J. I., Searle, M. M., & Srinivasan, M. (1998). Follow-up study of British military hostages and their families held in Kuwait during the Gulf War. British Journal of Medical Psychology, 71(3), 247-252.
- Brailey, K., Vasterling, J. J., & Sutker, P. B. G. W. (1998). Psychological aftermath of participation in the Persian Gulf War. A. Lundberg (Editor), The environment and mental health: A guide for clinicians (pp. 83-101). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Brandt, G. T., Norwood, A. E., Ursano, R. J., & Wain, H. (1997). Psychiatric morbidity in medical and surgical patients evacuated from the Persian Gulf War. Psychiatric Services, 48(1), 102-104.

- Bricknell, M. C. (1999). Options for future military health surveillance systems. Journal of the Royal Army Medical Corps, 145(2), 80-3.
- Brill, E. L. (1998). Women in the Gulf War call-up. Dissertation Abstracts International: Section B: the Sciences & Engineering, 58(10-B), 5325.
- Charatan, F. (1999). Nerve gas antidote a possible cause of gulf war illness [news]. BMJ, 319(7218), 1154.
- Coker, W. J., Bhatt, B. M., Blatchley, N. F., & Graham, J. T. (1999). Clinical findings for the first 1000 Gulf war veterans in the Ministry of Defence's medical assessment programme [see comments]. BMJ, 318(7179), 290-4.
- Deahl, M. P. (1997). The effect of conflict on combatants. D. Black (Editor), Psychological trauma: A developmental approach (pp. 134-147). London, England UK: Gaskell/Royal College of Psychiatrists.
- Dlugosz, L. J., Hocter, W. J., Kaiser, K. S., Knoke, J. D., Heller, J. M., Hamid, N. A., Reed, R. J., Kendler, K. S., & Gray, G. C. (1999). Risk factors for mental disorder hospitalization after the Persian Gulf War: U.S. Armed Forces, June 1, 1991-September 30, 1993. Journal of Clinical Epidemiology, 52(12), 1267-78.
- Downey, D. C. (1999). Porphyria and chemicals. [Review] [26 refs]. Medical Hypotheses, 53(2), 166-71.
- Engel, C. C. Jr, & Jing, Z. (1997). Identification of Gulf War syndrome: methodological issues and medical illnesses [letter; comment]. JAMA, 278(5), 383-4; discussion 385-7.
- Engel, C. C. Jr, Liu, X., Clymer, R., Miller, R. F., Sjoberg, T., & Shapiro, J. R. (2000). Rehabilitative care of war-related health concerns. Journal of Occupational & Environmental Medicine, 42(4), 385-90.
- Engel, C. C. Jr, Ursano, R., Magruder, C., Tartaglione, R., Jing, Z., Labbate, L. A., & Debakey, S. (1999). Psychological conditions diagnosed among veterans seeking Department of Defense Care for Gulf War-related health concerns. Journal of Occupational & Environmental Medicine, 41(5), 384-92.
- Engel, C. C. J., Kayanan, D., Roy, M., & Ursano, R. (1998). Multidisciplinary treatment of persistent symptoms after Gulf War service. Military Medicine, 163(4), 202-208.
- Escalante, A., & Fischbach, M. (1998). Musculoskeletal manifestations, pain, and quality of life in Persian Gulf War veterans referred for rheumatologic evaluation [see comments]. Journal of Rheumatology, 25(11), 2228-35.
- Everson, M. P., Kotler, S., & Blackburn, W. D. J. W. v. (1999). Stress and immune dysfunction in Gulf War veterans. M. Cutolo, & A. T. Masi (Editor), Neuroendocrine immune basis of the rheumatic diseases. Annals of the New York academy of sciences (Vol. 876, pp. 413-418). New York, NY: New York Academy of Sciences.
- Ferguson, E. (1999). Is there a Gulf War syndrome? [letter; comment]. Lancet, 353(9159), 1182; discussion 1182-3.
- Ferguson, E., & Cassaday, H. J. (1999). The Gulf War and illness by association. British Journal of Psychology, 90(4), 459-475.
- Filbert, B. G. (1997). Disorder and syndrome evidence. R. G. Lande, & D. T. Armitage (Editor), Principles and practice of military forensic psychiatry (pp. 187-198). Springfield, IL: Charles C Thomas Publisher.
- Frances, A. J., & Beckham, J. C. (1998). Identifying illness: Pitfalls and discoveries. Psychosomatic Medicine, 60(6), 669-670.
- Frost, S. D. (2000). Gulf War syndrome: proposed causes. Cleveland Clinic Journal of Medicine, 67(1), 17-20.

- Fukuda, K., Nisenbaum, R., Stewart, G., Thompson, W. W., Robin, L., Washko, R. M., Noah, D. L., Barrett, D. H., Randall, B., Herwaldt, B. L., Mawle, A. C., & Reeves, W. C. (1998). Chronic multisymptom illness affecting Air Force veterans of the Gulf War. JAMA: Journal of the American Medical Association, 280(11), 981-988.
- Gerrity, T. R., & Feussner, J. R. (1999). Emerging research on the treatment of Gulf War veterans' illnesses. Journal of Occupational & Environmental Medicine, 41(6), 440-2.
- Gordon, V. (1997). Identification of Gulf War syndrome: methodological issues and medical illnesses [letter; comment]. JAMA, 278(5), 383; discussion 385-7.
- Gots, R. E., Schwartz, S. L., Hershkowitz, N., Chaudhry, V., & Vogel, R. L. (1997). Identification of Gulf War syndrome: methodological issues and medical illnesses [letter; comment]. JAMA, 278(5), 385; discussion 385-7.
- Gray, G. C., Hawksworth, A. W., Smith, T. C., Kang, H. K., Knoke, J. D., & Gackstetter, G. D. (1998). Gulf War Veterans' Health Registries. Who is most likely to seek evaluation? [see comments]. American Journal of Epidemiology, 148(4), 343-9.
- Gray, G. C., Kaiser, K. S., Hawksworth, A. W., Hall, F. W., & Barrett-Connor, E. (1999). Increased postwar symptoms and psychological morbidity among U.S. Navy Gulf War veterans. American Journal of Tropical Medicine & Hygiene, 60(5), 758-66.
- Gray, G. C., Kaiser, K. S., Hawksworth, A. W., & Watson, H. L. (1999). No serologic evidence of an association found between Gulf War service and Mycoplasma fermentans infection. American Journal of Tropical Medicine & Hygiene, 60(5), 752-7.
- Gray, G. C., Kariser, K. S., Hawksworth, A. W., Hall, F. W., & Barrett-Connor E. (1999). Increased postwar symptoms and psychological morbidity among U.S. Navy Gulf War veterans. Am J Trop Med Hyg, 60(5), 758-766.
- Gray, G. C., Knoke, J. D., Berg, S. W., Wignall, F. S., & Barrett-Connor, E. (1998). Counterpoint: Responding to suppositions and misunderstandings [comment]. American Journal of Epidemiology, 148(4), 328-33; discussion 334-8.
- Gray, G. C., Smith, T. C., Kang, H. K., & Knoke, J. D. (2000). Are Gulf War veterans suffering war-related illnesses? Federal and civilian hospitalizations examined, June 1991 to December 1994. American Journal of Epidemiology, 151(1), 63-71.
- Gray, G. C., Smith, T. C., Knoke, J. D., & Heller, J. M. (1999). The postwar hospitalization experience of Gulf War Veterans possibly exposed to chemical munitions destruction at Khamisiyah, Iraq. American Journal of Epidemiology, 150(5), 532-40.
- Grillon, C., & Morgan, C. A. I. (1999). Fear-potentiated startle conditioning to explicit and contextual cues in Gulf War veterans with posttraumatic stress disorder. Journal of Abnormal Psychology, 108(1), 134-142.
- Haley, R. W. (1999). Chronic multisystem illness among Gulf War veterans [letter; comment]. JAMA, 282(4), 327; discussion 328-9.
- Haley, R. W. (1997). Is Gulf War syndrome due to stress? The evidence reexamined [see comments]. American Journal of Epidemiology, 146(9), 695-703.
- Haley, R. W. (1999). Is there a Gulf War syndrome? [letter; comment]. Lancet, 354(9190), 1645-6.

- Haley, R. W. (1998). Point: bias from the "healthy-warrior effect" and unequal follow-up in three government studies of health effects of the Gulf War [see comments]. American Journal of Epidemiology, 148(4), 315-23.
- Haley, R. W., Billecke, S., & La Du, B. N. (1999). Association of low PON1 type Q (type A) arylesterase activity with neurologic symptom complexes in Gulf War veterans. Toxicology & Applied Pharmacology, 157(3), 227-33.
- Haley, R. W., Hom, J., Roland, P. S., Bryan, W. W., Van Ness, P. C., Bonte, F. J., Devous, M. D. S., Mathews, D., Fleckenstein, J. L., Wians, F. H. Jr, Wolfe, G. I., & Kurt, T. L. (1997). Evaluation of neurologic function in Gulf War veterans. A blinded case-control study [see comments]. JAMA, 277(3), 223-30.
- Haley, R. W., & Kurt, T. L. (1997). Self-reported exposure to neurotoxic chemical combinations in the Gulf War. A cross-sectional epidemiologic study [see comments]. JAMA, 277(3), 231-7.
- Haley, R. W., Marshall, W. W., McDonald, G. G., Daugherty, M. A., Petty, F., & Fleckenstein, J. L. (2000). Brain abnormalities in Gulf War syndrome: evaluation with 1H MR spectroscopy. Radiology, 215(3), 807-17.
- Haley, R. W., Kurt, T. L., & Hom, J. (1997). Is there a Gulf War syndrome? Searching for syndromes by factor analysis of symptoms. JAMA: Journal of the American Medical Association, 277(3), 215-222.
- Hodgson, M. J., & Kipen, H. M. (1999). Gulf War illnesses: causation and treatment. Journal of Occupational & Environmental Medicine, 41(6), 443-52.
- Holdstock, D., & Stott, R. (1999). Is there a Gulf War syndrome? [letter; comment]. Lancet, 353(9159), 1183.
- Holmes, D. T., Tariot, P. N., & Cox, C. (1998). Preliminary evidence of psychological distress among reservists in the Persian Gulf war. Journal of Nervous & Mental Disease, 186(3), 166-173.
- Hom, J., Haley, R. W., & Kurt, T. L. (1997). Neuropsychological correlates of Gulf War Syndrome. Archives of Clinical Neuropsychology, 12(6), 531-544.
- Hotopf, M., David, A., Hull, L., Ismail, K., Unwin, C., & Wessely, S. (2000). Role of vaccinations as risk factors for ill health in veterans of the Gulf war: cross sectional study [see comments]. BMJ, 320(7246), 1363-7.
- Hunt, S. C., & Richardson, R. D. (1999). Chronic multisystem illness among Gulf War veterans [letter; comment]. JAMA, 282(4), 327-8; discussion 328-9.
- Hunt, S. C., Richardson, R. D., & McFall, M. (1999). Is there a Gulf War syndrome? [letter; comment]. Lancet, 353(9159), 1183.
- Hunt, S. C., Richardson, R. D., & McFall, M. (1999). Re: The Gulf War syndrome controversy [letter; comment]. American Journal of Epidemiology, 150(2), 216-7.
- Hyams, K. C. (1998). Developing case definitions for symptom-based conditions: the problem of specificity. [Review] [124 refs]. Epidemiologic Reviews, 20(2), 148-56.
- Hyams, K. C. (1998). Lessons derived from evaluating Gulf War syndrome: suggested guidelines for investigating possible outbreaks of new diseases [editorial]. Psychosomatic Medicine, 60(2), 137-9.
- Hyams, K. C., & Roswell, R. H. (1998). Resolving the Gulf War syndrome question [see comments]. American Journal of Epidemiology, 148(4), 339-42.
- Hyams, K. C., & Wignall, F. S. (1997). Identification of Gulf War syndrome: methodological issues and medical illnesses [letter; comment]. JAMA, 278(5), 384; discussion 385-7.

- Hymans, K. C., Hanson, K., Wignall, F. S., Escamilla, J., & Oldfield, E. C. (1995). The impact of infectious diseases on the health of U.S. troops deployed to the Persian Gulf during Operations Desert Shield/Desert Storm. Clinical Infectious Diseases, 20, 1497-1504.
- Ishoy, T., Suadicani, P., Guldager, B., Appleyard, M., & Gyntelberg, F. (1999). Risk factors for gastrointestinal symptoms. The Danish Gulf War Study. Danish Medical Bulletin, 46(5), 420-3.
- Ishoy, T., Suadicani, P., Guldager, B., Appleyard, M., Hein, H. O., & Gyntelberg, F. (1999). State of health after deployment in the Persian Gulf. The Danish Gulf War Study. Danish Medical Bulletin, 46(5), 416-9.
- Ismail, K., Everitt, B., Blatchley, N., Hull, L., Unwin, C., David, A., & Wessely, S. (1999). Is there a Gulf War syndrome? [see comments]. Lancet, 353(9148), 179-82.
- Jamal, G. A. (1998). Gulf War syndrome--a model for the complexity of biological and environmental interaction with human health. Adverse Drug Reactions & Toxicological Reviews, 17(1), 1-17.
- Joellenbeck, L. M., Landrigan, P. J., & Larson, E. L. (1998). Gulf War veterans' illnesses: a case study in causal inference. Environmental Research, 79(2), 71-81.
- Kaires, P. (1997). Identification of Gulf War syndrome: methodological issues and medical illnesses [letter; comment]. JAMA, 278(5), 385-7.
- Kaires, P. (1999). Symptoms in Persian Gulf War veterans [letter; comment]. [Review] [6 refs]. Journal of Occupational & Environmental Medicine, 41(11), 939.
- Kang, H. K., & Bullman, T. (1998). Counterpoint: Negligible "healthy-warrior effect" on Gulf War Veterans' mortality [comment] [see comments]. American Journal of Epidemiology, 148(4), 324-5; discussion 334-8.
- Kipen, H. M., Hallman, W., Kang, H., Fiedler, N., & Natelson, B. H. (1999). Prevalence of chronic fatigue and chemical sensitivities in Gulf Registry Veterans [see comments]. Archives of Environmental Health, 54(5), 313-8.
- Klaustermeyer, W. B., Kraske, G. K., Lee, K. G., Klaustermeyer, W. B., & Kurohara, M. L. (1998). Allergic and immunologic profile of symptomatic Persian Gulf War veterans. Annals of Allergy, Asthma, & Immunology, 80(3), 269-73.
- Knoke, J. D., & Gray, G. C. (1998). Hospitalizations for unexplained illnesses among U.S. veterans of the Persian Gulf War [see comments]. Emerging Infectious Diseases, 4(2), 211-9.
- Knoke, J. D., Gray, G. C., & Garland, F. C. (1998). Testicular cancer and Persian Gulf War service. Epidemiology, 9(6), 648-53.
- Korenyi-Both, A. L., Sved, L., Korenyi-Both, G. E., Juncer, D. J., Korenyi-Both, A. L., & Szekely, A. (2000). The role of the sand in chemical warfare agent exposure among Persian Gulf War veterans: Al Eskan disease and "dirty dust". [Review] [127 refs]. Military Medicine, 165(5), 321-36.
- Kroenke, K., Koslowe, P., & Roy, M. (1998). Symptoms in 18,495 Persian Gulf War veterans. Latency of onset and lack of association with self-reported exposures [see comments]. Journal of Occupational & Environmental Medicine, 40(6), 520-8.
- Kurt, T. L. (1998). Epidemiological association in US veterans between Gulf War illness and exposures to anticholinesterases. Toxicology Letters, 102-103:523-6.
- Kurt, T. L. (2000). Functional somatic syndromes [letter; comment]. Annals of Internal Medicine, 132(4), 329; discussion 329-30.

- Labbate, L. A., Cardena, E., Dimitreva, J., Roy, M., & Engel, C. C. (1998). Psychiatric syndromes in Persian Gulf War veterans: An association of handling dead bodies with somatoform disorders. Psychotherapy & Psychosomatics, 67(4-5), 275-279.
- Landrigan, P. J. (1997). Illness in Gulf War veterans. Causes and consequences [editorial; comment]. JAMA, 277(3), 259-61.
- Landrigan, P. J., Lashof, J. C., & Hamburg, D. A. (1998). Re: "Is Gulf War syndrome due to stress? The evidence reexamined" [letter; comment] [see comments]. American Journal of Epidemiology, 148(4), 404-7.
- Lange, G., Tiersky, L., DeLuca, J., Peckerman, A., Pollett, C., Policastro, T., Scharer, J., Ottenweller, J. E., Fiedler, N., & Natelson, B. H. (2000). Psychiatric diagnoses in Gulf War veterans with fatiguing illness. Psychiatry Research, 89(1), 39-48.
- Laor, N., Wolmer, L., Wiener, Z., Reiss, A., Muller, U., Weizman, R., & Ron, S. (1998). The function of image control in the psychophysiology of posttraumatic stress disorder. Journal of Traumatic Stress, 11(4), 679-696.
- Laor, N., Wolmer, L., Wiener, Z., Weizman, R., Toren, P., & Ron, S. (1999). Image control and symptom expression in posttraumatic stress disorder. Journal of Nervous & Mental Disease, 187(11), 673-679.
- Lashof, J. C., & Cassells, J. S. (1998). Illness among Gulf War veterans: Risk factors, realities, and future research. Jama: Journal of the American Medical Association, 280(11), 1010-1011.
- Lawler, M. K., Flori, D. E., Volk, R. J., & Davis, A. B. (1997). Family health status of National Guard personnel deployed during the Persian Gulf War. Family Systems Medicine, 15(1), 65-73.
- Lobel, T. E., & Gilat, I. (1998). The relationship between perceived probability of personal harm and distressful reactions during the Gulf War. International Journal of Stress Management, 5(2), 93-102.
- Macfarlane, G. J., Thomas, E., & Cherry, N. (2000). Mortality among UK Gulf War veterans. Lancet, 356(9223), 17-21.
- McCarroll, J. E., Fagan, J. G., Hermesen, J. M., & Ursano, R. J. (1997). Posttraumatic stress disorder in U.S. Army Vietnam veterans who served in the Persian Gulf war. Journal of Nervous & Mental Disease, 185(11), 682-685.
- McCarroll, J. E., Ursano, R. J., & Fullerton, C. S. S. P. i. p. s. No. 51. (1997). Exposure to traumatic death in disaster and war. C. S. Fullerton, & R. J. Ursano (Editor), Posttraumatic stress disorder: Acute and long-term responses to trauma and disaster (Vol. 51pp. 37-58). Washington, DC: American Psychiatric Press.
- McCauley, L. A., Joos, S. K., Lasarev, M. R., Storzbach, D., & Bourdette, D. N. (1999). Gulf War unexplained illnesses: persistence and unexplained nature of self-reported symptoms. Environmental Research, 81(3), 215-23.
- McCauley, L. A., Joos, S. K., Spencer, P. S., Lasarev, M., & Shuell, T. (1999). Strategies to assess validity of self-reported exposures during the Persian Gulf War. Portland Environmental Hazards Research Center. Environmental Research, 81(3), 195-205.
- Medinger, A. E., Chan, T. W., Arabian, A., & Rohatgi, P. K. (1998). Interpretive algorithms for the symptom-limited exercise test: assessing dyspnea in Persian Gulf war veterans. Chest, 113(3), 612-8.
- Miller, C. S., & Ashford, N. A. (1999). Chronic multisystem illness among Gulf War veterans [letter; comment]. JAMA, 282(4), 328-9.

- Morgan, C. A. I., Kingham, P., Nicolaou, A., & Southwick, S. M. (1998). Anniversary reactions in Gulf War veterans: A naturalistic inquiry 2 years after the Gulf War. Journal of Traumatic Stress, 11(1), 165-171.
- Morgan, C. A. I., Hill, S., Fox, P., Kingham, P., & Southwick, S. M. (1999). Anniversary reactions in Gulf War veterans: A follow-up inquiry 6 years after the war. American Journal of Psychiatry, 156(7), 1075-1079.
- Murphy, F. M. (1999). Gulf war syndrome [editorial; comment] [see comments]. BMJ, 318(7179), 274-5.
- Murphy, F. M., Kang, H., Dalager, N. A., Lee, K. Y., Allen, R. E., Mather, S. H., & Kizer, K. W. (1999). The health status of Gulf War veterans: Lessons learned from the Department of Veterans Affairs health registry. Military Medicine, 164(5), 327-331.
- Nicolson, G. L., & Nicolson, N. L. (1997). The eight myths of Operation 'Desert Storm' and Gulf War syndrome. Medicine, Conflict & Survival, 13(2), 140-6.
- Nicolson, G. L., & Nicolson, N. L. (1998). Gulf War illnesses: complex medical, scientific and political paradox. Medicine, Conflict & Survival, 14(2), 156-65.
- Nisenbaum, R., Barrett, D. H., Reyes, M., & Reeves, W. C. (2000). Deployment stressors and a chronic multisymptom illness among Gulf War veterans. Journal of Nervous & Mental Disease, 188(5), 259-66.
- Pearn, J. (2000). Traumatic stress disorders: A classification with implications for prevention and management. Military Medicine, 165(6), 434-440.
- Peckerman, A., LaManca, J. J., Smith, S. L., Taylor, A., Tiersky, L., Pollet, C., Korn, L. R., Hurwitz, B. E., Ottenweller, J. E., & Natelson, B. H. (2000). Cardiovascular stress responses and their relation to symptoms in Gulf War veterans with fatiguing illness. Psychosomatic Medicine, 62(4), 509-516.
- Pierce, P. F. (1997). Physical and emotional health of Gulf War veteran women. Aviation Space & Environmental Medicine, 68(4), 317-321.
- Pierce, P. F., Antonakos, C., & Deroba, B. A. (1999). Health care utilization and satisfaction concerning gender-specific health problems among military women. Military Medicine, 164(2), 98-102.
- Pierce, P. F., Vinokur, A. D., & Buck, C. L. (1998). Effects of war-induced maternal separation on children's adjustment during the Gulf War and two years later. Journal of Applied Social Psychology, 28(14), 1286-1311.
- Pollet, C., Natelson, B. H., Lange, G., Tiersky, L., DeLuca, J., Policastro, T., Desai, P., Ottenweller, J. E., Korn, L., Fiedler, N., & Kipen, H. (1998). Medical evaluation of Persian Gulf veterans with fatigue and/or chemical sensitivity. Journal of Medicine, 29(3-4), 101-13.
- Price, P. A. (1999). A phenomenological psychological analysis of the experiences of dis-ease. (Gulf War syndrome, psychosomatic). Dissertation Abstracts International: Section B: the Sciences & Engineering, 60(4-B), 1868.
- Proctor, S. P., Heeren, T., White, R. F., Wolfe, J., Borgos, M. S., Davis, J. D., Pepper, L., Clapp, R., Sutker, P. B., Vasterling, J. J., & Ozonoff, D. (1998). Health status of Persian Gulf War veterans: self-reported symptoms, environmental exposures and the effect of stress. International Journal of Epidemiology, 27(6), 1000-10.
- Rahill, A. A., & Lundberg, A. (1998). The psychiatric evaluation of patients with suspected toxic exposure. A. Lundberg (Editor), The environment and mental health: A guide for clinicians (pp. 43-56). Mahwah, NH: Lawrence Erlbaum Associates.

- Ritchie, E. C. (1997). Malingering and the United States military. R. G. Lande, & D. T. Armitage Principles and practice of military forensic psychiatry (pp. 122-133). Springfield, IL: Charles C Thomas Publisher.
- Roff, S. R. (1999). Is there a Gulf War syndrome? [letter; comment]. Lancet, 353(9159), 1182-3.
- Roland, P. S., Haley, R. W., Yellin, W., Owens, K., & Shoup, A. G. (2000). Vestibular dysfunction in Gulf War syndrome. Otolaryngology - Head & Neck Surgery, 122(3), 319-29.
- Rook, G. A., & Zumla, A. (1997). Gulf War syndrome: is it due to a systemic shift in cytokine balance towards a Th2 profile?. Lancet, 349(9068), 1831-3.
- Roy, M. J. (1998). Environmental influences on illness in Persian Gulf War veterans. A. Lundberg (Editor), The environment and mental health: A guide for clinicians (pp. 67-82). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.
- Roy, M. J., Koslowe, P. A., Kroenke, K., & Magruder, C. (1998). Signs, symptoms, and ill-defined conditions in Persian Gulf War veterans: Findings from the comprehensive clinical evaluation program. Psychosomatic Medicine, 60(6), 663-668.
- Schlesinger, N. (1997). Identification of Gulf War syndrome: methodological issues and medical illnesses [letter; comment]. JAMA, 278(5), 383; discussion 385-7.
- Schumm, W. R., Jurich, A. P., Bollman, S. R., Sanders, D., Castelo, C., & Webb, F. J. (1999). Understanding mail survey response rates among female reserve component veterans serving during the Persian Gulf War. Psychological Reports, 85(2), 653-664.
- Schumm, W. R., Jurich, A. P., Stever, J. A., Sanders, D., Castelo, C., & Bollman, S. R. (1998). Attitudes of Reserve component servicemembers regarding the consequences of frequent overseas deployments. Psychological Reports, 83(3, Pt 1), 983-989.
- Schwartz, D. A., Doebbeling, B. N., Merchant, J. A., Barret, D. H. et al. (1997). Self-reported illness and health status among Gulf War veterans: A population-based study. JAMA: Journal of the American Medical Association, 277(3), 238-245.
- Shaheen, S. (2000). Shots in the desert and Gulf war syndrome. Evidence that multiple vaccinations during deployment are to blame is inconclusive [editorial; comment]. BMJ, 320(7246), 1351-2.
- Shalev, A. Y., Peri, T., Gelpin, E., Orr, S. P., & Pitman, R. K. (1997). Psychophysiologic assessment of mental imagery of stressful events in Israeli civilian posttraumatic stress disorder patients. Comprehensive Psychiatry, 38(5), 269-273.
- Shen, Z. X. (1998). Pyridostigmine bromide and Gulf War syndrome. Medical Hypotheses, 51(3), 235-7.
- Sillanpaa, M. C., Agar, L. M., & Axelrod, B. N. (1999). Minnesota Multiphasic Personality Inventory-2 validity patterns: An elucidation of gulf war syndrome. Military Medicine, 164(4), 261-263.
- Sillanpaa, M. C., Agar, L. M., Milner, I. B., Podany, E. C. et al. (1997). Gulf War veterans: A neuropsychological examination. Journal of Clinical & Experimental Neuropsychology, 19(2), 211-219.
- Slusarcick, A. L., Ursano, R. J., Fullerton, C. S., & Dinneen, M. P. (1999). Life events in health care providers before and during Persian Gulf War deployment: The USNS comfort. Military Medicine, 164(10), 675-682.
- Smith, T. C., Gray, G. C., & Knoke, J. D. (2000). Is systemic lupus erythematosus, amyotrophic lateral sclerosis, or fibromyalgia associated with Persian Gulf War service? An examination of Department of Defense

- hospitalization data. American Journal of Epidemiology, 151(11), 1053-9.
- Soetekouw, P. M., De Vries, M., Preijers, F. W., Van Crevel, R., Bleijenberg, G., & Van, D. e. r. Meer JW. (1999). Persistent symptoms in former UNTAC soldiers are not associated with shifted cytokine balance. European Journal of Clinical Investigation, 29(11), 960-3.
- Southern, P. M. Jr, Patel, S., & Gander, R. M. (1998). Does examination of urinary sediment identify individuals with Gulf War syndrome? A pilot study [see comments]. American Journal of the Medical Sciences, 315(4), 225-9.
- Southwick, S. M., Morgan, C. A. I., Nicolaou, A. L., & Charney, D. S. (1997). Consistency of memory for combat-related traumatic events in veterans of Operation Desert Storm. American Journal of Psychiatry, 154(2), 173-177.
- Spaulding, D. J., Eddy, J. P., Chandras, K. V., & Murphy, S. D. (1997). Gulf War Syndrome: Are campus health officials prepared to cope with Persian Gulf veterans? College Student Journal, 31(3), 317-322.
- Spencer, P. S., McCauley, L. A., Joos, S. K., Lasarev, M. R., Schuell, T., Bourdette, D., Barkhuizen, A., Johnston, W., Storzbach, D., Wynn, M., & Grewenow, R. (1998). U.S. Gulf War Veterans: service periods in theater, differential exposures, and persistent unexplained illness. Portland Environmental Hazards Research Centre. Toxicology Letters, 102-103:515-21.
- Stimpson, N. J., & Thomas, H. V. (1999). Gulf health research--past, present and future. Journal of the Royal Society of Medicine, 92(9), 476-7.
- Stokes, J. W., & Banderet, L. E. (1997). Psychological aspects of chemical defense and warfare. Military Psychology, 9(4), 395-415.
- Suadican, P., Ishoy, T., Guldager, B., Appleyard, M., & Gyntelberg, F. (1999). Determinants of long-term neuropsychological symptoms. The Danish Gulf War Study. Danish Medical Bulletin, 46(5), 423-7.
- Unger, W. S., Gould, R. A., & Babich, M. (1998). The development of a scale to assess war-time atrocities: The War Events Scale. Journal of Traumatic Stress, 11(2), 375-383.
- Unwin, C., Blatchley, N., Coker, W., Ferry, S., Hotopf, M., Hull, L., Ismail, K., Palmer, I., David, A., & Wessely, S. (1999). Health of UK servicemen who served in Persian Gulf War [see comments]. Lancet, 353(9148), 169-78.
- Vasterling, J. J., Brailey, K., Constans, J. I., Borges, A. et al. (1997). Assessment of intellectual resources in Gulf War veterans: Relationship to PTSD. Assessment, 4(1), 51-59.
- Wagner, A. W., Wolfe, J., Rotnitsky, A., Proctor, S. P., & Erickson, D. J. (2000). An investigation of the impact of posttraumatic stress disorder on physical health. Journal of Traumatic Stress, 13(1), 41-55.
- Weisaeth, L. (1997). War-related psychopathology in Kuwait: An assessment of war-related mental health problems. C. S. Fullerton, & R. J. Ursano Posttraumatic stress disorder: Acute and long-term responses to trauma and disaster (pp. 91-121). Washington, DC: American Psychiatric Press.
- Weiss, B. (1998). Neurobehavioral properties of chemical sensitivity syndromes. [Review] [35 refs]. Neurotoxicology, 19(2), 259-68.
- Weiss, B. (1998). Behavioral Manifestations of Toxicity. A. Lundberg (Editor), The environment and mental health: A guide for clinicians (pp. 25-41). Mahwah, NJ: Lawrence Erlbaum Associates.

- Wolfe, J., Proctor, S. P., White, R. F., & Friedman, M. J. (1998). Re: "Is Gulf War syndrome due to stress? The evidence reexamined" [letter; comment]. American Journal of Epidemiology, 148(4), 402-3.
- Wolfe, J., Erickson, D. J., Sharkansky, E. J., King, D. W., & King, L. A. (1999). Course and predictors of posttraumatic stress disorder among Gulf War veterans: A prospective analysis. Journal of Consulting & Clinical Psychology, 67(4), 520-528.
- Wolfe, J., Proctor, S. P., Erickson, D. J., Heeren, T., Friedman, M. J., Huang, M. T., Sutker, P. B., Vasterling, J. J., & White, R. F. (1999). Relationship of psychiatric status to Gulf War Veterans' health problems. Psychosomatic Medicine, 61(4), 532-540.
- Wolfe, J., Sharkansky, E. J., Read, J. P., Dawson, R., Martin, J. A., & Ouimette, P. C. (1998). Sexual harassment and assault as predictors of PTSD symptomatology among U.S. female Persian Gulf War military personnel. Journal of Interpersonal Violence, 13(1), 40-57.
- Zhang, Q., Zhou, X. D., Denny, T., Ottenweller, J. E., Lange, G., LaManca, J. J., Lavietes, M. H., Pollet, C., Gause, W. C., & Natelson, B. H. (1999). Changes in immune parameters seen in Gulf War veterans but not in civilians with chronic fatigue syndrome. Clinical & Diagnostic Laboratory Immunology, 6(1), 6-13.

## APPENDIX D

### Approvals/Clearances From Military

1. Documentation that DAMD17-98-8662 does not require OMB review and is not subject to DoD 8910.1-M
2. Documentation of Human Subjects Approval from U.S. Army-Ft. Detrick.

**Ebert, Lori**

---

**To:** [NSCAW] Fairbank, John  
**Cc:** Ebert, Lori  
**Subject:** FW: Reply to April 12, 2000 Letter

**E-mail message from Bob Cushing, DoD Clearance Officer to Dr. Robert Bray at RTI stating that DAMD17-98-1-8662 "Relationships of Stress Exposures to Health in Gulf War Veterans" does not require OMB review and approval.**

-----Original Message-----

**From:** Cushing, Bob, CIV, WHS/DIOR [<mailto:CushingR@osd.pentagon.mil>]  
**Sent:** Thursday, April 13, 2000 2:23 PM  
**To:** [RMB@rti.org](mailto:RMB@rti.org)  
**Cc:** Elig, Tim W., DMDCEAST  
**Subject:** Reply to April 12, 2000 Letter  
**Importance:** High

Dr. Bray,

I received the subject information regarding your survey, "Relationships of Stress Exposures to Health in Gulf War Veterans," this morning. Based on our conversation and the information provided, OMB review and approval is not necessary based on the conditions of the grant and because the Department is not "sponsoring" the collection of information, as defined in 5 CFR 1320. Thank you for the opportunity to review the survey instrument. Bob Cushing, DoD Clearance Officer

Ebert, Lori

---

To: [NSCAW] Fairbank, John  
Cc: Ebert, Lori  
Subject: FW: Grant for Gulf War Illness Survey

E-mail message from Jim White, DoD Internal Reports Control to Dr. Robert Bray at RTI stating that DAMD17-98-1-8662 "Relationships of Stress Exposures to Health in Gulf War Veterans" is not subject to the provisions of DoD 8910.1-M, "DoD Procedures for Management of Information Requirements."

-----Original Message-----

From: White, Jim, CIV, WHS/DIOR [mailto:WhiteJ@osd.pentagon.mil]  
Sent: Tuesday, April 11, 2000 11:25 AM  
To: RMB@rti.org  
Cc: Jeffery, Anne, CIV, WHS/DIOR; Cushing, Bob, CIV, WHS/DIOR; Elig, Tim W., DMDCEAST  
Subject: Grant for Gulf War Illness Survey

Dr Bray,

As a representative of a non-Government entity (Research Triangle Institute) you are not subject to the provisions of DoD 8910.1-M, "DoD Procedures for Management of Information Requirements." You will need to coordinate with the Defense Manpower Data Center and satisfy their documentation requirements in order to obtain the sample. If you need further assistance please contact me at 703-604-4582 or by electronic mail.

James A. White  
DoD Internal Reports Control

USAMRMC IRB approval 9/15/00

Smith, Catherine A , 06:39 AM 09/18/20, RE: Duke & RTI IRB approvals o

From: "Smith, Catherine A Ms USAMRMC" <Catherine.Smith@DET.AMEDD.ARMY.MIL>  
To: "'John Fairbank'" <jaf@psych.mc.duke.edu>  
Subject: RE: Duke & RTI IRB approvals of mods to Human Subjects Research P  
rotocol for DAMD17-98-1-8662  
Date: Mon, 18 Sep 2000 06:39:30 -0400  
X-Mailer: Internet Mail Service (5.5.2650.21)  
X-AntiVirus: scanned for viruses by AMaViS 0.2.0-pre6 (<http://aachalon.de/AMaViS/>)

Dear Dr. Fairbank,

Thank you for your response. Your protocol was approved on 15 September!  
You should be hearing soon from the contracting specialist who is Cheryl  
Lowery. Her phone number is 301-619-7150. Thank you for all your help and  
best wishes on your study!

Catherine A. Smith  
Human Subjects Protection Specialist  
Regulatory Compliance and Quality  
U.S. Army Medical Research and Materiel Command  
ATTN: MCMR-RCQ  
504 Scott Street  
Fort Detrick, MD 21702-5012  
fax: 301-619-7803

-----Original Message-----

From: John Fairbank [mailto:jaf@psych.mc.duke.edu]  
Sent: Sunday, September 17, 2000 10:28 PM  
To: Smith, Catherine A Ms USAMRMC  
Subject: RE: Duke & RTI IRB approvals of mods to Human Subjects Research  
P rotocol for DAMD17-98-1-8662

Dear Ms. Smith

Thank you for your letter. The copy of the letter to Dr. Falletta, Chair  
of the IRB, from me that I faxed to you has the Duke IRB - stamp of  
approval for the revised protocol and revised consent forms. This is the  
cover letter to the revised protocol and the consent forms and is the  
document that contains the Duke IRB stamp of approval. This is the  
official Duke approval form from Dr. Falletta.

Thanks so much for your help. Please let me know if I can provide any  
additional information. I look forward to the Army IRB's approval.  
John Fairbank

>Dr. Fairbank,

>  
>I just received the fax. Thank you. Could you fax me the cover page of  
the  
>protocol and consent form which has your IRB-stamp of approval? Then I can  
>do the final approval. Thanks.

>  
>Catherine A. Smith  
>Human Subjects Protection Specialist  
>Regulatory Compliance and Quality  
>U.S. Army Medical Research and Materiel Command  
>ATTN: MCMR-RCQ  
>504 Scott Street  
>Fort Detrick, MD 21702-5012  
>fax: 301-619-7803

>  
>  
>-----Original Message-----

>From: John Fairbank [mailto:jaf@psych.mc.duke.edu]  
>Sent: Wednesday, September 13, 2000 5:17 PM  
>To: Smith, Catherine A Ms USAMRMC  
>Cc: loe@rti.org

---

Printed for John Fairbank <jaf@psych.mc.duke.edu>

## APPENDIX E

Approvals from Institutional Review Boards of  
Duke University Medical Center and the Research Triangle Institute

1. Approvals for full study implementation
2. Approvals for modifications made to respond to U.S. Army Human Subjects review

# 157Y

## DUKE UNIVERSITY MEDICAL INSTITUTIONAL REVIEW BOARD RESEARCH PROTOCOL

Complete and submit original and 2 copies to IRB (Room 106, Seeley G. Mudd Bldg., Box 2991) 15 days before scheduled meeting.  
FAX# 687-4737

P.I. John A. Fairbank <sup>3272</sup> M.D. PhD Dept. Psychiatry Phone 687-4686 PO Box 3454

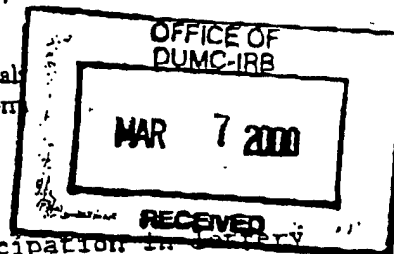
Faculty Sponsor \_\_\_\_\_ Dept. \_\_\_\_\_ Phone \_\_\_\_\_ PO Box \_\_\_\_\_

Project Title Relationships of Stress Exposures to Health in Gulf War Veterans

Previous Registry # (Renewals) 660-98-4 Source of Research Funds USARMC Department of Defense

Subject Types: ☒ Normal volunteers  
(Check Types ☐ In patients  
To Be Studied) ☐ Out patients  
☐ Patients controls  
☐ Students

☐ Subjects incapable of giving consent  
☐ Prisoners or institutionalized individuals  
☐ Minors and ☐ signed minor risk form  
☐ Patient subjects over age 65



Does protocol call for:

Yes No

☒ ☐

☐ ☒

☐ ☒

☐ ☒

☒ ☐

☐ ☒

☐ ☒

☐ ☒

Subject compensation? Patients \$ \_\_\_\_\_

Investigational devices or drugs? If yes, study phase \_\_\_\_\_

More than minimal physical risk?

More than minimal psychological stress?

Confidential material (questionnaires, photos, etc.)?

Extra costs to the subjects (tests, hospitalization, OPC visits)?

The exclusion of pregnant women?

Is blood used? Give total amount \_\_\_\_\_ over time period \_\_\_\_\_ (Days)

Volunteers \$ \_\_\_\_\_ Participation in \_\_\_\_\_  
letter of indemnification \_\_\_\_\_  
IND # \_\_\_\_\_

Are the following used? If yes, obtain appropriate signatures:

Yes No

☐ ☒

☐ ☒

☐ ☒

☐ ☒

☐ ☒

☐ ☒

☐ ☒

VA Hospital

Rankin Ward

Cancer Related

Hypo/Hyperbaric Unit

Radiation (ionizing, laser)

Center For Living

Operating Rm/Anesthesia Time \_\_\_\_\_

VA IRB

Clin Res. Unit Comm.

CPRC

Safety Comm.

Radiation Comm.

Center For Liv. Res. Comm.

Minutes required \_\_\_\_\_

The following signatures are required before submission to the IRB:

P. I. (and faculty sponsor) John A. Fairbank Date 3/6/00

Dept. IRB Member (Clinical Dept.) Chris Caskill Date 3/6/00

Division Head \_\_\_\_\_ Date \_\_\_\_\_

Dept. Chairperson \_\_\_\_\_ Date \_\_\_\_\_

Rec'd 3/6/00 Signed 3/6/00  
Date \_\_\_\_\_ Signed 3/6/00  
Date \_\_\_\_\_ Signed \_\_\_\_\_  
Date \_\_\_\_\_ Signed \_\_\_\_\_

DO NOT WRITE BELOW THIS LINE

Assigned IRB Member Lee

IRB Action:

☒ Approved

☐ Approved with modification

Approval Termination Date \_\_\_\_\_

☐ Tabled

☐ Disapproved

Registry # Assigned \_\_\_\_\_

REVIEW DATE: 3/22/00

TERMINATION DATE: 3/22/01

REGISTRY#ASSIGNED: 000626-00-3R1

Date of Approval \_\_\_\_\_

IRB Chairperson James

Research Triangle Institute  
P.O. Box 12194  
Research Triangle Park, NC 27709-2194  
Multiple Project Assurance No. M-1496

INSTITUTIONAL REVIEW BOARD NOTICE OF APPROVAL  
IRB # 03

PROJECT LEADER:

Robert M. Bray

TITLE: Relationships of Stress Exposures to Health in Gulf War Veterans

SPONSOR AGENCY: US Army

PROTOCOL DATE: March 13, 2000

RTI PROJECT NUMBER: 7360

or PROPOSAL NUMBER: \_\_\_\_\_

NATURE OF REVIEW:

(check one)

FULL ☒ EXPEDITED ☐ EXEMPT ☐

MEETING DATE: March 21, 2000

TYPE OF APPROVAL:

- ☐ PRELIMINARY. SCHEDULE NEXT REVIEW PRIOR TO INVOLVEMENT OF HUMAN SUBJECTS.  
☐ PRETEST/PILOT TEST. SCHEDULE NEXT REVIEW PRIOR TO FULL IMPLEMENTATION.  
☒ FULL IMPLEMENTATION.  
☐ RENEWAL.  
☐ AMENDMENT

Please note the following requirements:

PROBLEMS OR ADVERSE REACTIONS: If problems in treatment of human subjects or unexpected adverse reactions occur as a result of this study, you must notify the IRB Chairperson immediately.

CHANGES IN PROTOCOL: If there are significant changes in procedures or study protocol, you must notify the IRB Chairperson before they are implemented.

RENEWAL: You are required to apply for renewal of approval at least annually for as long as the study is active. Your next review date should be on or before March 21, 2001. IRB approval for this project expires on March 21, 2001.

  
IRB # 03 Chairperson

March 21, 2000  
Date

Steven A. Garfinkel, Ph.D.  
Print or Type Name

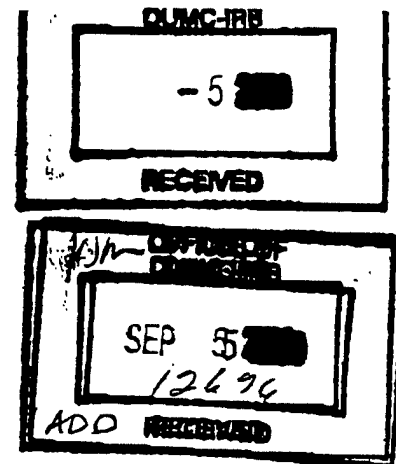
Copy of approved Informed Consent attached.

cc: Project Leader  
Office of Research Contracts: Richard Stowd



DUKE UNIVERSITY MEDICAL CENTER  
Department of Psychiatry and Behavioral Sciences  
Developmental Epidemiology Program

Telephone (919) 687-4686  
Facsimile (919) 687-4737



DATE: September 5, 2000  
TO: John M. Falletta, M.D., Chair, Medical Center IRB  
FROM: John A. Fairbank, Ph.D. *John A. Fairbank*  
SUBJECT: Expedited Review of Changes to Procedures for DUMC-IRB Registry No 000626-003R1—Relationships of Stress Exposures to Health in Gulf War Veterans

On March 7, 2000 the DUMC IRB approved the research and data collection protocol for Phase I (i.e., the mail survey) of the U.S. Army Medical Research and Materiel Command (USAMRMC) funded study entitled "Relationships of Stress Exposures to Health in Gulf War Veterans." Duke University Medical Center (DUMC; J. A. Fairbank, PI) is the grantee for this study; Research Triangle Institute (RTI) serves as a subcontractor to DUMC. In the minutes of the June 2000 USAMRMC Human Subjects Review of this research the Army made several recommendations that to be fully addressed required minor modifications to the study procedures and materials. On August 14, 2000 I sent Catherine Smith at the USAMRMC a revised Human Subjects Protocol that included these modifications. On August 15, 2000 I received notification from Catherine Smith indicating that the Army was satisfied with these revisions and would approve the study once the Army received approvals from the DUMC and RTI IRBs for the revisions (with or without additional modifications as requested by the local IRBs). In accordance with 45 CFR 46.110 regulations concerning "minor modifications to an approved protocol" that "involve no more than a minimal risk", I am requesting an expedited review of these revisions as specified below.

The only significant changes to the procedures and materials for this study from those specified in the protocol approved by the DUMC IRB on March 7 result from a change in the incentive procedures. Although the budget for this mail survey of 10,000 Gulf War Veterans is such that cost of providing compensation to all respondents is prohibitive, the original protocol indicated that respondents who return the survey in a timely fashion would be entered into up to three drawings to win one of 10 cash prizes.<sup>1</sup> However, the minutes of USAMRMC Human Subjects Review pertaining to this incentive procedure stated that "Active Duty military cannot be paid for their participation in research studies." Further correspondence with staff at the military Legal Affairs Office confirmed that Active Duty military personnel are not permitted to receive any form of compensation (including noncash incentives) for

<sup>1</sup>Specifically, the protocol stated that: "Respondents whose surveys are received within 6 weeks of the initial mailing (i.e., before the second mailing) will be eligible for two Grand Prizes of \$500. Respondents whose surveys are received within 12 weeks of the initial mailing (i.e., before the third mailing) will be eligible for four First Prizes of \$250. Respondents whose surveys are received within 16 weeks of the initial mailing (i.e., within 4 weeks of the third mailing) will be eligible for four Second Prizes of \$150. If a respondent is entered into a drawing and not selected, he or she will automatically be entered in the drawing for the next round of prizes. To preserve confidentiality, respondents' identification numbers, will be used to randomly select winners of these drawings."

participation in government-funded research unless such research involves a blood draw, which the Gulf War Veterans Health Survey does not.

In light of this regulation, in the revised USAMRMC Human Subjects Protocol submitted August 14, I proposed offering participation in the prize drawing only to potential respondents who were not currently on active duty (i.e., not on active duty when the sample frame is created). The USAMRMC Human Subjects Review Board is satisfied with this approach which I now present to the DUMC IRB for review. The available information suggests that a relatively small percentage of the study sample will be Active Duty military and that some form of incentive might increase response rates and thus the generalizability of the study findings. Although I realize that introducing even such a minor inequity among study respondents is not ideal, our study team believes that this is the best approach among those available to us and certainly preferable to excluding all Active Duty military from the study. To address this change in incentive procedures, our research team has drafted two versions of the study informational brochure and consent form (attached). These differ from the original versions and each other in that the prize drawing for timely response to the survey is described only in the materials prepared for potential respondents *not* currently on active duty. It is worth noting that prior to proposing this approach we confirmed that the Defense Manpower Data Center, who will be providing the sample frame for this study, could provide a variable which would specify whether or not each individual in the sample frame is currently on Active Duty.

There have been no other changes to the procedures for the Gulf War Veterans Health Survey since the study was approved by the DUMC and RTI IRBs. Minor changes to the study materials requested by the USAMRMC were as follows: (1) The addition to paragraph 2 of the consent form of the following sentence: "You only need to complete the enclosed questionnaire if you wish to be enrolled in this study;" and (2) Further specification in the consent form for respondents not on active duty of when the prize drawings would be held and how participants would be notified if they had won. (See paragraph 5 of informed consent letter for potential respondents not currently on active duty.)

Should you have additional questions about this matter, including the appropriateness of these changes for an expedited review, please feel free to contact me for additional information at 684-4686, ext. 265. Thank you for your time and assistance.

*Approved 9/13/30*

**JOHN M. FALLETTA, M.D.**  
**CHAIRMAN #1**  
**INSTITUTIONAL REVIEW BOARD**

**APPENDICES:**

1. Draft Text For Pamphlet Describing Gulf War Veterans Health Survey
  - A. Pamphlet for Active Duty Military
  - B. Pamphlet for Gulf War Veterans Currently Not on Active Duty
2. Consent Form For Gulf War Veterans Health Survey
  - A. Consent Form for Active Duty Military
  - B. Consent Form for Gulf War Veterans Currently Not on Active Duty
3. DUMC and RTI IRB Approvals for the Gulf War Veterans Health Survey
4. US Army IRB e-mail message indicating approval of revisions pending DUMC- and RTI- IRB approvals of revisions

Research Triangle Institute  
P.O. Box 12194  
Research Triangle Park, NC 27709-2194  
Multiple Project Assurance No. M-1496

INSTITUTIONAL REVIEW BOARD NOTICE OF APPROVAL  
IRB # 03

PROJECT LEADER:

Robert M. Bray

TITLE: Relationships of Stress Exposures to Health in Gulf War Veterans

SPONSOR AGENCY: US Army

SUBMISSION DOCUMENT DATE: August 31, 2000

RTI PROJECT NUMBER: 7360

or PROPOSAL NUMBER: \_\_\_\_\_

NATURE OF REVIEW:  
(check one) FULL ☐ EXPEDITED ☒ EXEMPT ☐

MEETING DATE: N/A

TYPE OF APPROVAL:

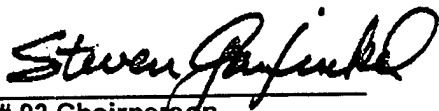
- ☐ PRELIMINARY. SCHEDULE NEXT REVIEW PRIOR TO INVOLVEMENT OF HUMAN SUBJECTS.  
☐ PRETEST/PILOT TEST. SCHEDULE NEXT REVIEW PRIOR TO FULL IMPLEMENTATION.  
☐ FULL IMPLEMENTATION.  
☐ RENEWAL.  
☒ AMENDMENT: Two modifications to consent form letters to veterans dated August 10, 2000 and two modified brochures dated August 31, 2000.

Please note the following requirements:

PROBLEMS OR ADVERSE REACTIONS: If problems in treatment of human subjects or unexpected adverse reactions occur as a result of this study, you must notify the IRB Chairperson immediately.

CHANGES IN PROTOCOL: If there are significant changes in procedures or study protocol, you must notify the IRB Chairperson before they are implemented.

RENEWAL: You are required to apply for renewal of approval at least annually for as long as the study is active. Your next review date should be on or before March 21, 2001. IRB approval for this project expires on March 21, 2001.



IRB # 03 Chairperson

September 13, 2000  
Date

Steven A. Garfinkel, Ph.D.  
Print or Type Name

Copy of approved Informed Consent attached.

cc: Project Leader  
Office of Research Contracts: Richard Strowd